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A skilled needs survey with implications for vocational-technical education within the Iowa Western Community College District Area XIII including Douglas and Sarpy Counties of metropolitan Omaha, Nebraska

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A SKILLED NEEDS SURVEY WITH IMPLICATIONS FOR VOCATIONAL-TECHNICAL EDUCATION WITHIN THE IOWA WESTERN COMMUNITY COLLEGE DISTRICT AREA XIII INCLUDING DOUGLAS AND SARPY COUNTIES OF METROPOLITAN OMAHA, NEBRASKA

by

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CHAPTER I: THE PROBLEM

Introduction

The population of the United States and the changes in it affect the role education must play in the lives of all people. Some of the changes which will affect education, more specifically the programs in all vocational-technical education, have occurred in the last five years. It has been estimated that 71 percent of the high school seniors in school today will graduate, and 30 percent of these students will enroll in college. An obvious question is what will happen to the other 41 percent? Vocational-technical education programs should be available in post high school programs for the 41 percent not going to college (46) as well as the 29 percent which do not graduate from high school.

These facts substantiate the decision. The United States population has now reached the two hundred million mark, and at the present rate will double by the end of the century. Half of the present population is under 25 years old, and nearly half of the projected increase in the labor force between 1965 and 1970 will occur among persons 14 to 25 years of age. After 1970, this increase will not be so great, but the young workers will still make up about one-fourth of the total. Seventy percent of the jobs in which people earned their living in 1900 are gone. Jobs of all types now are increasing in complexity requiring a higher degree of skill. By 1975, three-fourths of the workers will be working on products not yet developed. Automation, also, is eliminating many of the unskilled jobs.

The technical content of a great many types of jobs is increasing; some that formerly were classed as skilled crafts now begin to take on the

aspects of the work of the technician. Unemployment among youth of the 18 to 20 year age group is much higher than for older workers, with the implication and suggestion that many of them should be kept out of the labor market and given additional education during these years.

All of these facts would seem to indicate that vocational education cannot be ignored. In fact, some educators maintain that vocational guidance and occupational information need to be provided in the elementary school, and should be continued on through the post high school levels. They emphasize, too, that all youth need work experience as part of their education, and that pre-technical programs in high school should be available to all who possess the aptitude and interest and in commuting distance of all.

The magnitude of the job facing educators can be examined by looking at the number of potential students for whom federal assistance programs are designed. Only 20 percent of our high school student population will complete a four-year college program during their formal years of education (11). The remainder, or some 10.4 million students as of 1965, are potential students for vocational-technical education programs, and the number will increase to around 13.6 million by 1985. In addition, there are around 18 million adults enrolled in vocationally oriented programs in continuing education courses. The expense of not properly educating this major segment of our employed population can be measured by the loss of income tax and by the outlay of funds for such remedial programs as welfare, Office of Economic Opportunity, and M.D.T.A. Because a healthy economy depends largely upon its ability to adapt to changes in its productive capacity and consumer markets, those currently employed or about to be employed need the same attention and educational services as those

who are unemployed or out of school.

This all points out the condition that technological and scientific changes with major shifts in social and cultural events of the past 50 years demand a greater awareness on the part of each member of a society. Immaturity on the part of a manager, a worker, or a citizen presents an obstacle to present-day living. The solution seems to be a longer period of formal education for our youth so they will be able to meet the demands of life in a modern democracy. A period of 12 years seems to be insufficient for accepting one's civic, economic, social, and personal responsibilities. Communities have been extending opportunities for education horizontally, and these will have to be extended vertically as well.

As ably put by an administrator: (2, p. 6)

> This is an age in which it is impossible for one's education ever to be considered complete ... Systematic continuing education will be absolutely necessary for everyone who hopes to fulfill his responsibility to society.

These facts further point to a need of a better working relationship between the educator and the employer, and these facts also indicate that the school will have to play a larger role in the transition of its students from school to job entry. The national government has demonstrated that it can no longer sit idly by and let the schools ignore this area of education. Continuous vocational retraining will take place, either within the realm of public education or outside of it. Which it will be depends upon the educator's creative leadership in the development of educational programs and the national philosophy toward these programs.

What kinds of skills are needed by our society? According to studies made by the United States Department of Labor, there will be more than

four million skilled jobs opening up in the next ten years because of growth and replacement. Personnel will need training to fill them. The area of highest demand during this time will probably be for mechanics and repairmen. And, there will be a need for more foremen, since the complexity of the work processes demands a higher ratio of supervisors to workers. By 1975, manpower requirements in the service industries will probably rise by more than two-fifths over the 1964 level. In addition, there are the educational gap and the reports from many firms that researchers are actually filling roles of technicians. Thus, the scientific and technological advances have created an accelerating need for technicians. Almost every national manpower survey directly or indirectly points to ratios ranging from three to seven technicians for every professional person. With the critical shortage of funds, faculty, and facilities in higher educational institutions, the role of the two-year college in the education and training of technicians is increasingly obvious.

Furthermore, a survey made in New York State showed that there will be an expected growth in professional and technical workers between 1965 and 1975, and an expected decline in industrial laborers, farmers, and farm managers. This would seem to indicate that there is more need than ever before for post-high school education in the technical and professional fields.

Many changes and much expansion are needed in the present programs of vocational-technical education if the labor market needs of tomorrow are to be met. The logical place for this expansion is in the framework of public education.

Because of recent state legislation in Iowa, the largest responsibility will fall to area vocational-technical schools and community colleges. Although vocational-technical education could be best accomplished in specialized institutions, it is more likely to be done in the comprehensive institution, because tax supported area vocational schools and community colleges are increasing in number and have larger enrollments than do specialized institutions. However, these comprehensive institutions need to develop effective methods of providing vocational-technical programs. To do this, the community and industry need to be solicited so that they will give adequate support to quality education programs that will supply the needs of the local industries.

In order to meet these needs effectively, the area vocational schools and community colleges are relying on manpower projections and other research. For guidance purposes only the general direction and size of future employment changes are needed, but in order to plan for expanded educational facilities and activities, more precise quantitative information for each occupational cluster is needed. Projections of vocational-technical employment requirements for the nation yield much useful information, but fall short in helping plan for local training. More specific information about the local area must be obtained. Factors such as labor supply, transfer among occupations, and geographic shifts are needed to estimate training needs precisely. The United States Congress clearly indicated the importance it attaches to improving facilities to public community colleges and technical institutes for the training of skilled technicians when it passed the Higher Education Facilities Act of 1963, which allows such institutions up to 40 percent of the state expenditures

in federal funds for such work. Another impetus to technical-vocational education was the Vocational Education Act of 1963, enacted by Congress. It was the first act to provide for construction, and required the one to one matching of federal funds with state and local funds (9).

To make it possible for Iowans to make full use of both of these acts, the Iowa legislature enacted during the 61st General Assembly, Senate File 550. This act states nine major objectives to be carried out:

1. The first two (2) years of college work including pre-professional education.
2. Vocational and technical training.
3. Programs for in-service training, and retraining of workers.
4. Programs for high school completion for students of post-high school age.
5. Programs for all students of high school age who may best serve themselves by enrolling for vocational and technical training while also enrolled in a high school, public or private.
6. Student personnel services.
7. Community services.
8. Vocational education for persons who have academic, socio-economic, or other handicaps which prevent succeeding in regular vocational education programs.
9. Training, retraining and all necessary preparation for productive employment of all citizens. (33, p. 1)

It was then up to the county boards of education (multi-counties) to draw up a written plan for carrying out these objectives and submit it to the Iowa Department of Public Instruction who in turn submits it to the State Board of Public Instruction for review and subsequent approval. The Iowa Western Community College District Area XIII was approved on March 18, 1966. In order to gain approval of curricular

offerings, the board of directors must substantiate to the Department of Public Instruction that there is a need for the training, and that a person so trained can secure employment. Because of the geographic location of metropolitan Omaha, Nebraska, especially Douglas and Sarpy Counties, with respect to the Iowa Western Community College District Area XIII, it was believed that an omission of this metropolitan area would give an incomplete picture of the area's skilled needs.

Roberts (55, pp. 353-354) makes the following comments on the importance of determining community needs:

> The specific needs for vocational-technical education vary among different communities, and it is necessary to determine the specific needs of each community. Occupational surveys are frequently used to determine these needs. A community occupational survey is defined as an organized method of obtaining a comprehensive body of information governing the occupational life of the region. It involves a listing of the various jobs, the qualifications and needs of the workers, the training facilities and the employment opportunities. Surveys made may be of all industries or of a single industry. They may include all cases or a sampling. No one pattern or method is best for all communities. Specific objectives, community size and facilities available determine the particular method to use.

Roberts further states (55, p. 356) that the planning of programs and courses must precede the purchase of equipment.

> The plant and equipment needs for programs of vocational technical education should be determined by the types of curriculums and courses of study. This suggests that courses should first be planned, and then the equipment and facilities needed should be selected to meet the needs of the course. Frequently, the student load on equipment used in vocational technical education programs is relatively low, and this means high unit costs, a fact which should be taken into account in planning these programs.

The area schools must make an early determination of the programs and courses to be offered in vocational-technical education in order to make effective plans for physical facilities and equipment needed to

provide workers with the skills demanded of today's business and industrial employers. To facilitate making these decisions, detailed information about the skilled, semi-skilled, and technician needs of this area are necessary.

Statement of the Problem

Hence, the main problem of this study is to find out the number and kind of semi-skilled, skilled, and technician-workers that will be needed by employers in the named counties of the Iowa Western Community College District Area XIII, and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska, with implications for curriculum planning. The basic assumption of this study was: Employers within the Iowa Western Community College District Area XIII and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska, can most realistically state their present level of employment and project their need for trained workers more accurately than any secondary source can do. More specifically, the problem can be broken down as follows:

1. To analyze the anticipated employment growth in number and kind of skilled, semi-skilled, and technician-workers in the Iowa Western Community College District Area XIII and the metropolitan area of Omaha, Nebraska.

2. To estimate the need for trained manpower, in certain occupational groups, on September 30, 1967, and by January 1, 1969, and 1971.

3. To obtain from employers their estimation of the availability of trained persons in the different occupational groups, by job titles, as being short, adequate, or over-supply.

4. To ascertain the number of workers each employer anticipates he will have on the payroll by January 1, 1969, and by January 1, 1971.

5. To find out the number of current vacancies in each occupational group by job title.

6. To compute the percent of replacement needs for persons leaving the labor force due to retirement, death, promotion, or certain other reasons, per year in each occupational area by job title.

7. To seek the extent of formal in-plant training including those persons currently in training and the projected number to complete training by January 1, 1969, and January 1, 1971.

8. To determine (through interviews with the largest employers in the stated area) the: (1) effects of automation on the present firms and businesses, and (2) kinds of new skilled workers needed to maintain anticipated operation.

9. To adopt a questionnaire and job descriptions and to define procedure used in the Merged Area XIII Community College skilled needs survey.

Purpose of the Study

The purpose of this study is to obtain from employers first-hand data concerning the need for semi-skilled, skilled, and technician-workers in the Iowa Western Community College District Area XIII, and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska. The additional purposes are:

1. To project the need for various vocational and technical education programs to be offered by the Iowa Western Community College District Area XIII.

2. To obtain enough information to be able to develop priorities in determining the need to offer specific full time vocational and technical educational programs.

3. To collect statistics concerning employers' needs and make these statistics available to the Department of Public Instruction and the State Board of Public Instruction, upon which they may base approval of course offerings of the Iowa Western Community College District Area XIII.

4. To determine the need for trained workers as projected by employers.

Definition of Terms

So that the meanings of the various terms used in this study will be clear, the following definitions are made:

1. Iowa Western Community College District Area XIII: One of 16 merged-area, vocational-technical schools or community colleges in Iowa. The Iowa Western Community College District Area XIII encompasses seven counties and part of five additional counties in southwestern Iowa. Three educational divisions represent the community college: vocational-technical, adult and continuing education, and arts and sciences education.

2. Douglas and Sarpy Counties of metropolitan Omaha, Nebraska: The metropolitan area of Omaha, Nebraska, is predominately contained within Douglas County; however, several firms and Offutt Air Force Base are located in Sarpy County. Sarpy County is located directly south of Douglas County.

3. Semi-skilled worker: A person employed in a job which demands only a basic knowledge and only short term training to become capable of carrying out assignments. Those occupations depicting one or more of the following requirements: (1) a high order of manipulative ability, but limited to a well-defined work routine; (2) a primary reliance upon vigilance rather than judgment in situations where a lapse might damage materials or product; and (3) judgment limited by having decisions made by others or by its application to a narrow field. These occupations may require the performance of a limited part of a craft or a skilled occupation.

4. Skilled worker: A person employed at a job which demands considerable training and/or experience to be able to perform his work assignments. Those craft and manual occupations that require predominantly a thorough and comprehensive knowledge of process involved in the work, the exercise of independent judgment, usually a high degree of manual dexterity, and in several occupations, extensive responsibility for valuable products or equipment. Workers in these occupations usually become qualified by serving apprenticeships or by completing extensive training periods.

5. Technician: Any person who assists with the applied aspects of a trade or profession; usually two years of formal training beyond high school are needed. Technicians do not usually require so broad a background or so much initiative and judgment as those in the professional occupations in performing work in complicated situations. The occupations are typically concerned with the technical or mechanical aspects of broad theoretical fields.

6. Technical education: Education to earn a living in an occupation in which success is dependent largely upon technical information and understanding of the laws of science and principles of technology

as applied to modern design, production, distribution, and service (1).

7. Vocational education: Training or retraining of individuals for gainful employment which is given in schools or classes under public supervision and control or under contract with a state board or local educational agency.

8. Current vacancies: The number of additional persons who would be employed by an industry or employer if the supply had been available when the survey questionnaire was completed (34).

9. Merged area: A merged area is an area where two (2) or more county school systems or parts thereof merge resources to establish and operate a vocational school or community college (33).

10. Area Community College: An Area Community College is a school offering the first two years of college work, vocational and technical training, in-service training, and retraining of workers (33).

Sources of Data

The population sample in this study was drawn from the master list of employers who pay workman's compensation insurance in the states of Iowa and Nebraska. Industries and firms chosen for the investigation were those employing four or more persons on a full-time basis.

Other sources used for purposes of this study were:

1. Industrial and business officials.
2. Related research and pertinent literature.
3. Dictionary of Occupational Titles.
4. Chambers of Commerce in the Iowa Western Community College District Area XIII.
5. The Omaha, Nebraska, Chamber of Commerce.
6. The Iowa State Employment Service Offices.
7. The Nebraska State Employment Office in Omaha, Nebraska.
8. The Employment Security Commission in Des Moines, Iowa, and Omaha, Nebraska.

9. The Iowa Department of Public Instruction, Research Division.

Delimitations

The scope of this investigation will be limited to a study of the employers in the Iowa Western Community College District Area XIII and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska. There are 2,242 employers with four or more employees included in this study. The study includes all employers included in an Employment Security Commission tape of all employers paying workman's compensation insurance. This file is complete enough to be used as the official check against state income tax files.

The information sought from employers about their employees was the total number employed as of September 30, 1967, and anticipated total number of employees by January 1, 1969, and 1971.

Furthermore, the study will be limited to obtaining information about the present number of employees, both male and female, current vacancies, anticipated number of employees by January 1, 1969, and January 1, 1971, the extent of in-plant training by job titles, and the educational implications involved.

Information will be obtained from employers regarding their estimation of the availability of trained persons for each job title as being short, adequate, or over-supply. Those firms which employed over 100 workers and which were personally interviewed were asked about the effect of automation on their firm and the kinds of new skilled workers to maintain their business.

Organization of the Study

The material compiled in this study was divided into five chapters.

The first chapter includes an introduction to the study, the statement of the problem, definition of terms, the purpose and scope of the study, and sources of data. The second chapter contains a summarization and analysis of related literature and research. The methodology and design for the study are discussed in the third chapter. The fourth chapter includes a presentation and discussion of the findings from the questionnaire and the personal interviews. The fifth chapter of the study reports and presents a summary, a conclusion, and recommendations.

CHAPTER II: REVIEW OF THE LITERATURE

Introduction

The preceding chapter stated the desirability of a study to determine the need for semi-skilled, skilled, and technician level workers in the Iowa Western Community College District Area XIII, and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska. This chapter relates literature and research pertinent to the problem investigated.

In the literature related to this study, three general categories are discernible: (1) relationships between skill and need studies and curriculum planning, (2) shortcomings in vocational-technical education planning, and (3) analysis of labor market needs. Consequently, such a division has been made in the following review of related literature.

Relationships Between Skill Need Studies and Curriculum Planning

The late President John F. Kennedy's interest in the area of vocational-technical education prompted him to appoint a Panel of Consultants on Vocational Education. The Panel's task of reviewing and evaluating the state of vocational-technical education in the United States was completed in November of 1962, and many of its recommendations appeared in the Vocational Education Act of 1963. Among these was the recommendation that occupational training be correlated with the labor requirements of the area. (57)

Recognizing this need for industrial educational cooperation, Congress authorized three federal agencies to initiate and support skill need surveys to aid vocational-technical curriculum planning. These are: The

Office of Manpower Automation and Training of the Department of Labor (OMAT), the Bureau of Educational Research and Development, and the Division of Vocational and Technical Education of the United States Office of Education. (43, p. 2)

The real necessity for basic research into the occupational needs of areas supplied by vocational-technical education is not only to insure employment of graduates, however. Marguerite Zapoleon, in a study of 96 surveys completed during the period of 1930 to 1940 (70, p. 3), indicates that the types of local occupational information ordinarily sought were three:

1. An over-all picture of the occupational distribution of the community's population at a particular time.
2. Specific information about particular occupations.
3. Indications of changes and trends both in occupational distribution and in the occupations themselves.

Furthermore, as noted by the Florida Study of Vocational Education (23, p. 4) undertaken by the Florida State Department of Education:

> Each curriculum requires at least one instructor with specialized qualifications and calls on expensive facilities appropriate to that curriculum alone. Investments for such courses cannot be justified unless there are sufficient numbers of capable students who desire each occupational employment objective, and sufficient employment demand for the placement of graduates.

Dr. Ralph C. Wenrich, Professor of Vocational Education at the University of Michigan (68, p. 54), told the American Technical Education Association meeting in Milwaukee on December 3, 1963:

> Provision must be made in the administrative structure (of vocational institutions of learning) for continuous curriculum development ... (and) must continuously be evaluated, revised when necessary, dropped when there is no longer a need, and new programs added as needs indicate.

Beyond insuring employment for its graduates, a vocational or

technical educational institution must be aware of the skill needs of its area to justify its expense and maintain a realistic curriculum in order to fulfill its obligations to the community.

Industry, acting in its own self-interest, has agreed with the need for parallels between occupational need and curriculum offerings, supporting skill need surveys of its own (45) and calling for "a cooperative working relationship between education and industry." (2, p. 44)

"Industry should expect vocational people to ask for help," writes one industrial leader: (2, p. 44)

> Help in guidance, help with educational materials, and help to place trainees with the same hoopla college scholarship winners receive.

Educators have frequently cited the need for skill need studies in curriculum planning.

Norman C. Harris (28, p. 28), Professor of Technical Education at the University of Michigan, speaking before a conference of persons involved in technical education in the Junior College, at the Midwest Technical Education Center in St. Louis urged that:

> Prior to initiating occupational education curriculum or courses, two essential steps are necessary -- determining need and determining capability. Need is established by well planned and conducted surveys.

Research studies conducted by Hickman, Kahler and McClurg in agricultural education at Iowa State University of Science and Technology in cooperation with the Iowa Agricultural Experiment Station and the Agricultural Education Section of the Division of Vocational Education, State Department of Public Instruction, reveal suggestions for agriculture related vocational-technical programs.

Hickman (29, pp. 161-162) through surveying Iowa farm operators on

business record and analysis systems stated that:

> The recently created area vocational-technical schools within the state of Iowa should also respond to this educational need of farmers. These institutions will have the advantage of being centrally located within a given area and can provide needed instruction in farm management, accounting, and record analysis to their farmer clientele, either on a night school basis or by organizing short courses. In addition, regular courses should be provided in farm management in order to meet the needs of younger farmers who may have failed to acquire vocational agriculture or other training in agriculture. Finally, area vocational school personnel should establish close ties with both local agricultural extension workers and departments of vocational agriculture, providing for a joint effort in this common purpose.

A survey of retail farm machinery distributors by Kahler (34, p. 168-169) indicated that:

> The occupational requirements of new employees in retail farm machinery distribution and persons presently engaged in farming indicate a need for establishment of area vocational schools. Programs in these schools should place major emphasis on instruction in farm machinery maintenance and repair, as it was found that the largest increase in numbers to be employed were in the area of service. The area vocational schools could provide an additional service. They should provide instruction to update the understandings, skills, and abilities possessed by persons presently employed in retail farm machinery distribution. Programs in these schools should provide instruction in business education, distributive education, trade and industrial education, and in agricultural education.

In a study of vocational agriculture programs in Iowa, McClurg (38, p. 63) recommended that:

> The responsibility of reaching the 14,958 20 to 29 year old rural farm males who should be receiving agricultural instruction must be shared by the 343 proposed high school vocational agriculture departments, the 16 area vocational-technical schools and the College of Agriculture. ... It was recommended that the area vocational-technical schools expand their agricultural program offerings to meet the needs of 3,000 rural persons annually.

R. L. Burns (10), analyzing Factors Governing the Establishment and Operation of Area Vocational Technical Schools writes:

> The most beneficial, and most frequently conducted research studies were those designed to obtain local employment potential.

Edward Erskine, coordinator of the Macomb Occupational Education Survey (39, p. 5), explained that the educational survey conducted in Macomb County was to determine the present status and the future need for occupational education opportunities for the citizens of Macomb County within the public high schools and the community college.

> The report purposely confines itself to suggestions concerning specific curriculum content and instructional methods. These matters are the heart of the required new approaches and must be determined by vocational and technical educators and persons expert and active in the occupational skills for which educational programs are being considered. Curriculum and method cannot be permitted to again atrophy as they have in the past, but must be fluid, experimental, and exploratory.

Howe (31, p. 142), declares that "the local employment opportunities should be considered," but adds that "this should not be considered too restrictive a factor as the younger people move to seek employment if they have the proper training."

In response to government authorization and industrial and educational urgings, numerous surveys of skills need to aid vocational-technical curriculum planning have been undertaken in the United States since 1963.

Many states, often in conjunction with State Departments of Education and state universities have initiated state-wide skill need surveys. Of these, studies from the following states were reviewed: Connecticut, Florida, Georgia, Iowa, Michigan, New Mexico, New York, Oregon, Mississippi, and Wisconsin. Also reviewed were surveys of smaller areas, often several counties gathered with the aid of State Departments of Education, especially in Connecticut and Ohio. In addition, doctoral and masters' theses dealing with skill need studies and pertinent areas were reviewed as well as articles and educational bulletins.

Erwin's investigation of business and industrial employment training

needs in a selected five-county area in east central Illinois (21, p. 102) helps to clarify the training situations in industry.

> Many industries in the area rely on outside organized training programs to develop skilled craftsmen to supply their needs. The training programs conducted by industry were used to meet immediate needs such as those arising when a new worker was employed or an older worker was transferred. Most industry training was given informally on the job and was related to immediate production or service needs.

J. E. Casey (12, p. 44), Manager of the Educational Program at Leeds Northrup Company, sent a direct mail survey to 1,000 "V.I.P. Educators" asking what they felt industry wanted from vocational education. He concluded that the consensus was:

> Individual(s) trained in the basic skills necessary for the production of a particular product by a particular factory.

But what skills, what products, and what factory? These questions require precise and accurate answers. This, then, is the task of the skill needs survey.

F. H. Boyle (8) outlined four research areas for emphasis in planning vocational-technical curriculums:

1. Periodic (every 5-10 years) statewide studies of occupational need.
2. Continuing less formalized studies of occupational need in counties served by junior colleges to up-date information provided by periodic state studies.
3. Studies of selected occupations.
4. Follow-up studies of selected graduates.

Another area for research would be the unemployed.

The Industrial Relations Center (54, p. 4), Iowa State University, and the Iowa State Manpower Development Council emphasized the validity and necessity for occupational need surveys:

> The job vacancy survey is designed as an efficient means for obtaining highly useful and up-to-date occupational employment information. It is intended to supplement long-run forecasts of manpower trends which are related to changes in technology, population distribution and industrial structure.

> Complete information on occupational employment data trends requires both types of approaches. Long run forecasts, however, take time to develop and though valid for some future period, are subject to often rapid short run variations. Job vacancy data, though short run in nature, has advantages in providing an immediate and highly sensitive measure of employer skill requirements.

The State of Oregon Department of Employment (48, p. 5) points out the value of consultation with industry as opposed to mere tabulation of employed:

> a. Technological change usually affects industry before affecting an occupation or group of occupations.
> b. The effect of the sum total of hidden technological changes is sometimes (more) recognizable in relation to industry than to an occupation.

The Georgia Skill Study conducted by the Georgia Department of Labor Employment Security Agency (25, p. 11) identified the value of job vacancy surveys:

> Such information will assist the Georgia Department of Education to determine the size of these training centers, the courses of study required, and the equipment necessary for classroom and laboratory.

N. C. Harris (28, p. 386), writing in the Junior College Journal, adds further questions which might be answered by such a survey:

> What are the employment opportunities in the region which would justify specific technical vocational curriculums? Can you expect cooperation from business, industry and labor groups? What are the factors of stability and the factors of instability in the industrial and business climate of the region?

Applegarth's study of vocational education and employment opportunities in Columbia County and the Portland metropolitan area of Oregon regards the value of such a survey as (3, p. 218):

> the development of a vocational program which would prepare workers for a group or cluster of related occupations. The development of such a program would enable the graduate to qualify for a wider range of jobs, provide flexibility to the

worker in a changing economy and thereby improve his continued employability and also permit the schools to relate vocational training more closely to changing occupational patterns and employment opportunities.

Shortcomings of Vocational-Technical Education Planning

Joseph P. Arnold (4) has summarized the current labor problem with the statement:

> The increasing needs of industry for individuals who are prepared to function in technical occupations has resulted in an apparent gap in the development of appropriate public education offerings.

The Ohio Department of Education (46, p. 111), in a Survey of the Mahoning County Area notes:

> As a result of the impact caused by the last world war which drew heavily upon vocational education, labor, business and industry to organize and supervise the war production training program in consequent emergency, the later impact of unemployment and poverty problem, but yet thousands of positions are left vacant because of unqualified skilled and technically trained personnel ...

In a survey of unemployment and labor force trends 1947-1961, G. R. Bonner (7, p. 1) writes:

> Chronic unemployment has its roots in the supply side of the labor market. The employment problems of America's workers require a new approach to worker education and training if the national goal of full employment is to be reached.

Vocational education is not meeting the requirements of industry. If there are numerous jobs requiring technical or vocational training left unfilled, and if the current rate of unemployment is due not to shortage of jobs but a shortage of qualified workers, then the responsibility of our unemployment difficulty falls largely on the shoulders of persons willing and able to profit from vocational-technical training.

Is there a shortage of such willing and capable persons?

Van Ommeren (66, p. 55) discovered in his study of high school graduates in northwestern Iowa that:

> Slightly over 50 percent of both males and females indicated an interest in a post-high school vocational program to be held at a center 30 to 60 miles away for one-half to two years.

Fuglsby discovered in a survey of employers in four northwestern Iowa counties that 20 percent of the industries responding have a planned in-service program for their new employees.

> In the professional-managerial, clerical-sales, agricultural, skilled and semiskilled groups, the employers indicated that qualified workers are not available. This indicates that training of some kind is needed to prepare workers for these occupation groups. (24, p. 111)

In a similar study of adult high school drop-outs in Sioux City, Iowa, Cox noted that similar interest existed, more pronounced in his under-40 than over-40 age group. (18)

There is apparently no dearth of persons willing to participate in vocational-technical training.

Various explanations and observations have been offered concerning these skill shortages. The most widespread is a simple lack of trained graduates coupled with industry unawareness of educational programs as cited by J. E. Casey (12, p. 45):

> (In a U.S.O.E. research project of 26 companies) virtually all of the companies studied have a real immediate (sic) need for electro-mechanical technicians. Few of those interviewed stated that, at the present time, they were acquainted with electro-mechanical programs now in operation. Graduates in these programs apparently are so few in number as to be of little significance in providing for the need.

"The Wisconsin Manpower Outlook" (69, p. 1) cites a short-coming in vocational guidance:

> Even college graduates often find that job opportunities for them are limited because of their educational background or that their chosen field was not as they had imagined it.

But far more interesting to this study are the findings of the Northern

Natural Gas Company in their survey of job vacancies in the states of Iowa, Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin. They discovered vocations, having "little impact upon the area's economic development," such as printing, were adequately filled by qualified trained graduates of technical-vocational education programs while in occupations of major importance to the area, such as food processing, training "was almost non-existent". (45, p. 3) Training goes on, but in the wrong fields.

Because "occupational characteristics of the labor force at any given time are determined primarily by the nature of the education system over the previous 60 years" (30) inadequacies in long-range planning over past decades might be a reason for the apparent lack of realistic curriculum building cited above.

"An area vocational school (must) anticipate rather than react later to new facts of life in area industry." (56, p. 16) The unreliability of such anticipation over long periods of years might be explained by Shibata (57):

> (his evidence) suggests that the relationships between the pattern of occupational, and therefore educational requirements, and the level and pattern of economic output is much more complex and subtle than the use of presently existing manpower projections implicitly presumes.

Or, as summarized by a School Shop article (22, p. 43), the problem includes a lack of specific information:

> Until recently, any intensive and systematic study of societies' manpower needs has been limited to studies done by states and local communities, and then interest usually has been shown only by those elements of business and industry in which acute manpower shortages exist.
>
> For purposes of planning local programs of vocational education, more specific information is needed in regard to the kind and character of the manpower needs of the community served by a particular school district.

Possible areas of misunderstanding that might lead to inaccurate conclusions are pointed out in a survey conducted by the Pasadena City Schools: (50, p. 23) and (50, p. 10)

> It seems apparent that a large percentage of job descriptions used by different firms vary greatly, and are not especially reliable for educational guidance or for use by curriculum builders.
>
> From many personal interviews and a previous study there is evidence that, on the average, experienced employees as to types and kinds of education and training required by employees for jobs. It must be recognized, of course, that in many cases employers reflect their own experiences and desires which may be over and beyond the skills and knowledge considered adequate by employees.

There are then, shortcomings in vocational-technical curriculum planning which contributes to our employment problems today as well as those of the future. It seems clear that part of this shortcoming is traceable, by one means or another, to a lack of accurate and reliable information concerning the industrial needs of state or union.

Analysis of Labor Market Needs

That the labor market requires, and will continue to require trained workers, semi-skilled, skilled and technician level workers in every aspect of our growing economy was maintained and supported by each resource consulted. Representative of these statements is this declaration from the Survey of Technical Needs for the Pasadena San Gabriel Valley Area conducted by the Pasadena City Schools (50, p. 17):

> Our needs for technicians and skilled craftsmen is as great as our need for scientists and engineers. It can be concluded that technological advancement depends as much upon the availability of skilled and technical workers as upon the contribution of scientists and professionally trained workers. It is essential to have an adequate and balanced resource of skilled manpower if a high standard of living and economic growth are to be maintained. This is why it is so important to keep perspective

> and balance in planning and operating educational programs... Even the very necessary and important contribution of the scientists and engineers cannot be transformed into consumer goods and guided missiles without the help of educated and trained technicians and skilled craftsmen.

The studies of skill needs in the Iowa Western Community College District Area XIII, and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska, were limited to a study by the Northern Natural Gas Company of six states, including Iowa; job vacancy surveys made by the Industrial Relations Center of Iowa State University, and the Iowa State Manpower Development Council; Master's Degree Theses at Iowa State University of Science and Technology by Paul Sumter on the Aviation Industry Needs in Iowa and at Northern Iowa University by Harlan Giese on Iowa Training Needs for Metal Tradesmen; a Ph.D. Dissertation at Iowa State University of Science and Technology by Gary Weede on Electronic Technician Personnel and Training Needs of Iowa Industries; an Iowa State Department of Health bulletin on Public Health Manpower Analysis by Jerry Smith; an Omaha Area Skills Survey conducted by the Nebraska Department of Labor, Division of Employment; and a survey on the additional supply of labor available to Omaha SMSA by Dr. Lawrence Danton of the University of Omaha.

The Iowa job vacancy surveys conducted by the Industrial Relations Center of Iowa State University are mailed to approximately 4,000 manufacturing firms listed with the center for Industrial Research and Service of Iowa State University. The questionnaires request job vacancy and starting wage rate data for six months periods. One of the primary reasons for this job vacancy series was to aid the area vocational schools in developing curriculum and training programs by providing occupational employment data. (52, 53, 54)

An examination of the previous surveys conducted by the Industrial

Relations Center of Iowa State University, and the results of its current survey will show some similarities and possible emerging trends. Many occupations which had high vacancies in the first survey continue to have high vacancies in the last survey. In the Iowa Western Community College District Area XIII, the first two surveys indicate the greatest number of vacancies in processing food and related areas, while the most recent shows the area of slaughtering, breaking and curing as having the greatest number of vacancies.

The Northern Natural Gas Company's findings agreed with this appraisal and added that, while our neighbors in South Dakota and Nebraska annually train 60 percent of their job vacancy requirements, Iowa trains only 27 percent annually. (45, p. 3) The study also concluded that "courses offered are not as responsive to the needs of the Northern Plains States as they might be." The survey also predicted future shifts "from least skilled to most skilled occupations," and from "rural to urban locations." (45, p. 4)

The study concludes that: (45, p. 3)

> Industry's annual requirements in many types of skilled craftsmen and operative occupations in which training is not presently offered are large enough to support full time courses in each state.

Sumter revealed (61, p. 37) in a questionnaire survey of the aviation industry in Iowa the geographical concentrations of skilled needs:

> Eight counties reflect the majority of aviation mechanic/technician jobs. Scott and Polk have the greatest number of any two, with Woodbury, Linn, Pottawattamie, Plymouth, Cerro Gordo and Dubuque next in order.

In occupational job needs, he makes the following projections for aviation mechanics and technicians: (61, p. 61)

> The number of mechanics is expected to increase by an aggregate rate of 27% between 1967 and 1970. More avionics technicians will be needed; the expected increase for the same period is 146%.

Giese surveyed by questionnaire 440 firms with a total employment of 23,763 metal tradesmen. The largest number of employees occurred in the job classification machinist (production), with a total employment of 8,947. Next, with 2,900 employees, was the occupation of welder combination. The training and replacement needs for the 12 firms responding in Merged Area XIII were greatest for machinist production, machinist custom, welder combination, tool and die maker, and assemblers, in that order.

Giese also stated (26, p. 87) that:

> Employers responding to the questionnaires expressed desire to hire most of their new and replacement employees from those who will graduate from preparatory vocational-technical curricula. The need for new and replacement employees in 1968, 1970, and 1972 is nearly equal, in all eleven occupations surveyed, to the number the firms employed in 1966. Since only limited vocational and technical training was available in 1966 from which vocational graduates could be employed, one might conclude that the 440 firms in Iowa feel that public education should provide more occupational education.

Further, population projections in health occupations in Iowa were made by Smith who used past growth patterns in addition to the Hamilton-Perry method of projection. This work shows an increase of six to 12 percent from 1970 to 1980 for Fremont, Harrison, Mills, and Pottawattamie Counties in the demands for trained workers in the health occupations. Those occupations with the greatest training demands were licensed nurse, nurse's aide, medical social worker, and staff nurse. (59)

The Omaha area skills survey conducted by the research section of the Nebraska Department of Labor included Douglas and Sarpy Counties in Nebraska and Pottawattamie County in Iowa. A sample of over 1,000 non-

agricultural firms was made by questionnaire and personal interviews in early 1963. They were selected from all establishments subject to state unemployment insurance laws. Eight occupational areas were selected with 144 different job titles. Projections of expansion needs, replacement needs, and anticipated job openings were made for one and three years. Skilled positions for which the greatest number of job openings existed were: general clerk, typist, mechanics and repairman not elsewhere classified, and electricians, in that order. (42)

Danton attempted to determine, from the best information available, the potential supply of labor available to present and prospective employers of the greater Omaha area. The study reveals that a stop of the out-migration from the recruiting area, an increase in labor force participation, and a present average annual increase within the Omaha recruiting area will make approximately 9,650 net additional workers per year. (19)

Weede found in a statewide survey of electrical and electronic manufacturers the following additionally trained personnel were needed by January 1, 1968, by two firms in Merged Area XIII: (67, p. 39) eight electronic technicians, one electrician and two electrical engineers.

Weede (67, p. 99) concluded in his survey that:

1. The manufacturing industries of Iowa have a definite need for well trained persons in the field of electronics.
2. The training needs vary with the size of the industry, product manufactured, and geographical location.
3. It is very difficult for industries to predict the number of additional employees needed beyond one year.
4. The main source of technically trained electrical personnel is in-company training programs.

But the Review of Literature reveals no current information is available on the number of trained workers needed in the Iowa Western

Community College District Area XIII.

Mr. George Lawry, Occupational Analyst Supervisor to the Iowa State Employment Security Commission, reported that his agency does not have any state-wide or Merged Area XIII statistics on the need for semi-skilled, skilled and technician level workers.

Mr. Richard Konicek, Director of the Iowa Development Commission, reported that his agency does not have any statistics that reveal the need for semi-skilled, skilled or technician level workers in the Merged District Area XIII.

Mr. John Ropes, Director of the Iowa Manpower Council, reported that his agency had only the report done in cooperation with the Industrial Relations center at Iowa State University on job vacancies in Iowa manufacturing establishments for March through August 1966.

Summary

In planning curricula for vocational-technical programs the review of literature showed that the course of study for each program must be continuously revised so that occupational training can be correlated with the labor requirements of the area. Consultation with industry is essential because technological change usually affects the industry before it does an occupation. Industry has supported the parallels between occupational need and curriculum offerings by means of surveys to establish course needs. Occupational surveys are immediate and highly sensitive measures of skill requirements and are intended to supplement long-run forecasts of manpower trends.

This review also indicated that while some industries maintain organized training programs, most industries preferred organized school

preparation to fill their need. Furthermore, there was a decided need (40 percent) (21) for technical training on the high school and post-high school level. Research must definitely be done by area schools and community colleges in order to keep their vocational-technical programs meaningful.

A necessary supplementary source to the above suggested research is the periodic statewide or regional studies of occupational need as mentioned by Boyle (8). An excellent source of this information for the merged area schools in Iowa are the job vacancy summaries published every six months by the Industrial Relations Center of Iowa State University. Some 4,000 industries' cooperation with the center from a three state region results in a summary by merged area districts.

More planning information is needed by program directors of area schools on the kind and characteristic of the manpower needs as well as complete industry and business involvement. There are misunderstandings between industry and vocational-technical programs due to the lack of standardized job descriptions. We have not expended sufficient energies in keeping the two way flow of information between the industries and community and the area vocational-technical programs. Nor have we had sufficient justification based on research, industrial need, potential students, or the voters' approval for all of the new programs that have been established. Because of limited resources, lack of adequately trained instructors and the need for expensive equipment to operate these programs in relation to the training demands, extensive public relations and research are needed to assist program planning.

Studies indicate (52) the greatest number of job vacancies in Merged District Area XIII are in food processing and related areas which are

also an area indicated as having almost no training facilities in a six state study including Iowa (45). This six state study also found that Iowa was training only 27 percent of their job vacancy requirements prior to the establishment of the merged area schools.

Existing studies (26, 42, 59, 61) indicate a present need for cluster occupational training programs in machine related, electronical repair, office, and medical science occupations. Individual firms and interest groups seek more training programs than can be justified. Vocational-technical training programs should reflect the cluster occupational concept allowing more efficient use of equipment and facilities.

It is possible, given unlimited resources, that the two year merged area schools in Iowa might become all things to all people. This would not be truly in agreement with history, however, as history suggests limited resources and decisions based on established priorities. Considering all research, this means that the merged area schools have the choice of doing many things haphazardly or a limited number well.

CHAPTER III: METHODS AND PROCEDURES

The purpose of this study was to determine the number and kind of semi-skilled, skilled, and technician workers employed at present, the number and type that will be needed by employers in the Iowa Western Community College District Area XIII, and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska, by January 1, 1969, and January 1, 1971, and the educational implications involved. Another aim of the study was to determine the number of present vacancies and the extent of formal in-plant training in the area, and to obtain from employers their estimation of the availability of trained workers in various titles.

This chapter describes the methods and procedures that are to be used to collect and analyze the required data for the study. The chapter was divided into five parts: (1) selection of the sample, (2) description of the instrument, (3) construction of the instrument, (4) collection of the data, and (5) treatment of the data.

Selection of the Sample

In surveying the employers in the Iowa Western Community College District Area XIII, and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska, it was decided that a sampling procedure would be used in place of complete enumeration in Douglas and Sarpy Counties of metropolitan Omaha, Nebraska. The advantages of the sampling technique over the complete enumeration technique were reduced costs, greater speed, and greater scope.

A complete enumeration was used within the Iowa Western Community College District Area XIII of all employers of four or more persons as

shown by a 1967 print-out of firms paying workman's compensation in the district. A complete enumeration was used because the number of firms was not prohibitive and sufficient information on firm size was not available for use.

This study was a result of a survey of all employers in the Iowa Western Community College District Area XIII, as indicated by the March 1967 workman's compensation records, plus a stratified sample of the August 1967 workman's compensation records for Douglas and Sarpy Counties of metropolitan Omaha, Nebraska, which employ four or more persons. The area surveyed consists of Cass, Fremont, Harrison, Mills, Page, Pottawattamie, and Shelby Counties in Iowa, and Douglas and Sarpy Counties in Nebraska.

The mailing list for the Iowa Western Community College District Area XIII which was used for the study was originally compiled by Dr. Kenneth Wold, Director of the Research Coordinating Unit within the Division of Vocational Education of the Department of Public Instruction, Des Moines, Iowa. A comparable list of the Omaha area was obtained through the services of Mr. Howard J. Watson, Chief of the Nebraska State Employment Security Commission, Lincoln, Nebraska. The lists were copied from a record of employers of four or more persons and coded according to Standard Industrial Classification by the Employment Security Commission. The Employment Security Commissions of Iowa and Nebraska developed the lists from official workman's compensation records, and the lists are used by the Iowa and Nebraska State Tax Commissions as the official check against state income tax records. These lists as they were used for the survey contained 2,242 employers.

Before these lists were accepted as the most comprehensive and complete, the following agencies were contacted: Iowa State Employment Security Commission, Des Moines and Council Bluffs, Iowa, offices; Iowa Development Commission; Iowa State Manpower Development Council, Des Moines and Council Bluffs, Iowa, representatives; Iowa State University Industrial Relations Center; the Division of Vocational Rehabilitation, Department of Public Instruction; the Northern Natural Gas Regional Research Office in Omaha, Nebraska; and the Chambers of Commerce of Council Bluffs, Iowa, and Omaha, Nebraska.

The main limitation of the Iowa and Nebraska mailing lists was that no local, county, state or federal governmental agencies were included. Because these agencies, from all employment reports, show a steady increase in the number of employees on the state and local level, it was considered necessary to include them in the survey. Current telephone directories were used for developing listings of these agencies. The Area XI Community College Survey had found additional firms through telephone listings that were not shown on the recently up-dated print-out of the State Department of Public Instruction. It was also found that the returns obtained from these additional listings were extremely small, and so it was not considered necessary that the print-out for the Iowa Western Community College District Area XIII and the area of metropolitan Omaha, Nebraska, be checked against the current telephone listings of all firms.

Considering the cost and the time involved and the advantages of the available list, it did not seem practical or necessary to develop a separate mailing list. Telephone directories were used only to fill

voids in the Employment Security Commission print-outs for governmental agencies and community hospitals.

Industries and employers were classified by using the Standard Industrial Classification, and were broken down into the following groups: (1) Agricultural Related Occupations; (2) Aircraft Mechanic and Maintenance Industries; (3) Automotive and Diesel Industries; (4) Construction Industries; (5) Food Service Industries; (6) Governmental State and Federal Agencies; (7) Governmental State and Local Agencies; (8) Health Occupations; (9) Industrial and Manufacturing Industries; (10) Printing and Publishing Industries; (11) Sales and Service Industries; (12) Textile Industries; and (13) employers who mainly employ Office and Data Processing personnel.

Using Standard Industrial Classifications, industries and employers were listed by their major product or activity, and were included in one of the first 12 categories listed above. (See Appendix C for SIC numerals for each category.) Those not fitting into one of these employer groups were classified separately and received a different questionnaire, Office and Data Processing. All firms of sufficient size to employ a maintenance staff received an additional questionnaire on Construction within Industry. Listed below are the number of employers in each major occupational grouping in the Merged Area XIII: (1) Agricultural Related Occupations, 170; (2) Aircraft Mechanic and Maintenance Industries, 10; (3) Automotive and Diesel Industries, 146; (4) Construction Industries, 186; (5) Food Service Industries, 221; (6) Governmental State and Federal Agencies, 34; (7) Governmental State and Local Agencies, 138; (8) Health Occupations, 56; (9) Industrial Manufacturing Industries, 30; (10) Printing and Publishing and Related Industries, 25; (11) Sales

and Service Industries, 189; (12) Textile Industries, 12; and (13) Office and Data Processing, 128.

There were approximately 3,000 firms shown on the Nebraska Employment Commission print-out with addresses within Douglas and Sarpy Counties of metropolitan Omaha, Nebraska. Seven hundred eighty firms or approximately 25 percent of all firms listed on the print-out were either sent questionnaires or personally interviewed. Within each of the 13 occupational categories, questionnaires were sent firms and businesses according to the following procedure: 10 percent of those employing four to 15 employees; 50 percent of those employing 16 to 25 employees; 75 percent of those employing 26 to 50 employees; and 100 percent of those employing 50 to 100 employees, and all firms with more than 100 employees listed on the print-out were personally interviewed.

Following are the number of employers in each of the 13 major occupational groupings for Douglas and Sarpy Counties of metropolitan Omaha, Nebraska; (1) Agricultural Related Occupations, 56; (2) Aircraft Mechanic and Maintenance Industries, 7; (3) Automotive and Diesel Industries, 79; (4) Construction Industries, 100; (5) Food Service Industries, 151; (6) Governmental State and Federal Agencies, 19; (7) Governmental State and Local Agencies, 20; (8) Health Occupations, 29; (9) Industrial Manufacturing Industries, 73; (10) Printing and Publishing Industries, 40; (11) Sales and Service Industries, 201; (12) Textile Industries, 24; and (13) Office and Data Processing, 98.

Description of the Instrument

The instruments used in gathering data for this study consisted of 16 separate questionnaires (See Appendix A). Thirteen of these question-

naires were samples used by Philip Langerman in the Area XI Community College Survey and adapted for the Iowa Western Community College District Area XIII, and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska. Three questionnaires, the Agricultural Related Occupations, the Governmental State and Federal Agencies, and the Governmental State and Local Agencies, were developed for this study.

Each employer was asked the total number of persons employed by the firm as of September 30, 1967. Besides this, employers were asked to estimate their employment level by job title as of January 1, 1969, and January 1, 1971. Also, the official name of the business, business description, business address, and telephone number was obtained from each employer. Each of the 16 questionnaires had the same headings which included the following information: (1) The Dictionary of Occupational Titles (DOT) code number (for office use only), Job Title; (2) present number of employees, total male, total female; (3) current number of vacancies; (4) anticipated employment, total number of workers in January 1, 1969, and January 1, 1971; (5) percent leaving employment due to death, retirement, or promotion per year; (6) formal in-plant training; and (7) current number of trainees, number completing training by January 1, 1969, and January 1, 1971. Finally, each employer was asked to check the present supply of trained workers by job titles as either short, adequate, or surplus.

Construction of the Instrument

Each questionnaire listed, according to the Dictionary of Occupational Titles (DOT), code numbers for the job titles most often found in each of

of the 13 major occupational categories used in this survey. These major occupational categories listed the following number of job titles by DOT code numbers:

Agricultural Related	31
Aircraft Mechanic and Maintenance	11
Automotive and Diesel	20
Construction	29
Food Service	15
Governmental State and Federal	14
Governmental State and Local	32
Health	18
Manufacturing and Industrial	54
Printing and Publishing	16
Sales and Service	31
Textile	12
Office and Data Processing	24

(Refer to Appendix B for the names of each job title used.)

Information was obtained relative to each specific job title. Each employer was asked to complete the survey questionnaire by listing the number of employee positions for which they employed workers or desired new workers.

The first part of the questionnaire was constructed to provide total company information. This information was obtained as of September 30, 1967, and anticipated for January 1, 1969, and January 1, 1971; the items that were used to obtain from each employer information about each job title were chosen from the pioneering survey questionnaire used by the Area XI Community College, through an advisory group, and through pilot of this survey questionnaire on 18 governmental state and local agencies, five governmental state and federal agencies, and three agricultural related firms. One survey questionnaire was not considered adequate to properly serve the different job titles for all occupational areas. Therefore, a survey questionnaire was devised for each of the major occupational

categories, and job titles were selected that were most appropriate to that particular industry. Job titles were selected from the Dictionary of Occupational Titles, and for recording purposes, the DOT code numbers were marked on each individual questionnaire with the job title. The job titles were obtained through use of the demand occupations as listed by the United States Department of Labor and as listed by the local employment offices as demand occupations in the State of Iowa. Job titles were also recommended by the staff of the Iowa Western Community College Area XIII including Dr. Robert D. Looft, Superintendent; Mr. Warren R. Morrow, Director of Student Personnel Services; Mr. Oran H. Beaty, Director of Vocational-Technical Education; Mr. Jim Hamilton, Director of Adult and Continuing Education; and Mr. Lester E. Andrews, Business Manager.

An advisory committee was organized for the purpose of reacting to the survey instrument. The committee was composed of managers of the Iowa State Employment Services Offices in Atlantic, Council Bluffs and Shenandoah, Iowa; and secretaries of the Chambers of Commerce offices in Clarinda, Council Bluffs, and Harlan, Iowa. The survey instrument and directions were altered in regard to suggestions from this meeting.

Personal conferences or coordinating meetings were held with the Nebraska State Employment Office in Omaha, Nebraska; the Employment Security Commission in Des Moines, Iowa, and in Lincoln, Nebraska; the Omaha, Nebraska, Chamber of Commerce; CAMPS, the Cooperative Area Manpower Development Council in Council Bluffs, Iowa, and Omaha, Nebraska; and the Research Coordinating Unit of the Iowa Department of Public Instruction, Des Moines, Iowa.

One of the most valuable ideas from the interaction with these groups

was the need to reduce the amount of accompanying material that was mailed with each questionnaire. To this end, it was decided that two mailings would be made in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska. Our first mailing consisted of an introduction letter from the appropriate chamber of commerce and informative data about Iowa Western Community College which was mailed two weeks before the questionnaires were mailed. The second mailing included the letter from the superintendent, the directions for completing the questionnaire, and the questionnaires according to the 13 categories previously mentioned.

The job titles listed on the survey questionnaires in the appendix are those job titles that were used in this survey. There were 307 job titles listed on the 16 survey questionnaire forms. A meeting was called of the advisory committee to evaluate and to suggest the most appropriate headings so that the most accurate information possible could be secured. The instrument consisted of one and in some cases two pages, $8\frac{1}{2}$ x 11 inches. This instrument was reviewed by the committee and was then tested using firms in the Iowa Western Community College District Area XIII only.

The questionnaires for the Agricultural Related Occupations, Governmental State and Federal Agencies, and Governmental State and Local Agencies were initially developed for this study. A suggested list of job titles for each of these areas was developed from the Dictionary of Occupational Titles. The list of the Agricultural Related job titles was sent to the eight county extension directors in the Merged Area XIII for them to indicate the most common job titles in their counties. Then Mr. Jim Hamilton, Director of Adult and Continuing Education and past vocational

agriculture instructor in the area for several years, assisted in screening the returns.

Mr. Bill Freese, acting city manager of Council Bluffs, and the advisory committee assisted in screening the local governmental job titles. The governmental area was divided into two parts to categorize and shorten the length of the questionnaires. The Governmental State and Federal Agencies questionnaire included state agencies having a clerical function and all federal agencies which are predominantly clerical. The Governmental State and Local Agencies questionnaire included all state agencies having a maintenance function as well as all county and local agencies.

An extensive review of the studies done in other states to determine the needs for occupationally trained workers was used to help construct the survey questionnaires. To obtain uniform definition of job titles, job descriptions were recorded for each job title. These were compiled with the use of the Dictionary of Occupational Titles and Job Descriptions. A cover letter was written to introduce the survey to the employer. This was accompanied by a brief set of directions informing the employer how to complete the questionnaire.

Collection of Data

Because the sample consisted of 1,345 employers in the Iowa Western Community College District Area XIII and about 3,000 in the metropolitan area of Omaha, Nebraska, it was decided that a stratified sampling by a mailed questionnaire would be the best means of collecting information for this study where adequate information was available to use the sampling technique. Noting that direct contact with the largest employers had met with great success in the Area XI Community College Survey, it was considered necessary that a similar approach be used. All firms of 100 or more

employees in the Iowa Western Community College District Area XIII, and in Douglas and Sarpy Counties of metropolitan Omaha, Nebraska, as shown by the respective Employment Security Commission print-outs, were visited personally. These firms numbered 17 in the Merged Area XIII and 116 in metropolitan Omaha, Nebraska.

A letter was sent out on October 26, 1967, to all secretaries of the chambers of commerce within Merged Area XIII informing them of the survey and seeking their assistance. A copy of the letter which was sent to each firm surveyed and which explained the objectives of the school was also enclosed.

Personal conferences were conducted with several of the larger chambers of commerce including Council Bluffs, Iowa, and Omaha, Nebraska. Letters of endorsement were obtained from the chambers of commerce in Clarinda and Council Bluffs, Iowa, and from Omaha, Nebraska.

The personal interviews of all those firms which employ more than 100 employees, as shown by the Employment Security Commission print-outs, were done by the writer and a team of five graduate students from the Department of Education, Iowa State University of Science and Technology, Ames, Iowa. There were 133 firms contacted during the week of December 18, 1967. Seventeen of these firms were in the Iowa Western Community College District Area XIII, and 116 were in the metropolitan area of Omaha, Nebraska. If the interviews permitted the time, each interviewer was to close with two specific questions: (1) What changes due to automation do you foresee for your firm or business? and (2) For what new types of skilled positions will you need trained personnel?

On December 27, 1967, questionnaires were mailed to 226 Agricultural

Related Occupations; 17, Aircraft Mechanic and Maintenance Industries; 225, Automotive and Diesel Industries; 286, Construction Industries; 372, Food Service Industries; 53, Governmental State and Federal Agencies; 158, Governmental State and Local Agencies; 85, Health Occupations; 103, Industrial and Manufacturing Industries; 65, Printing and Publishing Industries; 390, Sales and Service Industries; 36, Textile Industries; and 226, Office and Data Processing.

It was decided that it would be more efficient and economical to elicit the assistance of all town clerks in completing the questionnaires for all offices located in the community city hall and to elicit the assistance of all county superintendents of schools in completing the questionnaires for all county offices located in the county court house. In two situations where the county superintendent of schools did not office in the county court house, individual questionnaires were sent to the various county offices.

Besides placing the Standard Industrial Classification code number on each questionnaire for the appropriate occupational categories, each questionnaire was coded according to community and county in which the firm was located. This marking method established a means of identifying the number of employees or trained-workers needed by county or by community. A follow-up letter was mailed to each employer who had not returned the questionnaire after a period of two weeks. To improve the percent return from employers who had been contacted by a personal visit from the interview team but had not completed the questionnaire during the visit, telephone contact was made to solicit their completed questionnaires. A copy of the follow-up letter is enclosed in Appendix C.

Treatment of the Data

The data obtained from the survey questionnaire were reviewed and then tabulated, using various codings, onto 80-column sheets which were used to key punch the data on 80-column IBM business machine cards. The data were tabulated by counting the number of employees by job title. Arithmetic tabulation was made for all questions on the questionnaire. Data were obtained by job titles and were reported totally and separately for the seven counties within the Iowa Western Community College District Area XIII, and Douglas and Sarpy Counties of metropolitan Omaha, Nebraska. The employer was encouraged to add job titles of occupations for which he had need for trained workers, and 46 additional job titles were added by various employers, increasing the original total of 307 to a final total of 353 job titles.

When returned, each questionnaire was checked to determine the completeness of the information included. If complete, the name of the employer was then removed from the follow-up mailing list. To allow for tabulation and a basis for differentiation, each questionnaire was coded by county and community. This allows for analysis of the data as being rural or urban and as being from metropolitan Council Bluffs, Iowa, and Omaha, Nebraska, or the rest of Merged Area XIII.

Employers were asked to indicate the supply of trained workers available as experienced by their particular business. These choices were reported either as a short supply, adequate supply, or as a surplus supply of workers available.

Projections made from these data reflected the need for workers, by job titles, as of January 1, 1969, and January 1, 1971. Priority rankings

were then determined by the percent of increase found in the number of workers needed by job title.

In making projections in the demand for workers, a ten percent estimated turnover in employees was projected. These projections were based on the number of persons leaving the job due to deaths, retirements, promotions, and those leaving for personal reasons.

FINDINGS

Introduction

The principal results of the study were reported in an order similar to which the questions appeared on the questionnaire. The population surveyed was composed of 2,242 employers who employ four or more employees in the Iowa Western Community District Area XIII and Douglas and Sarpy Counties of Omaha, Nebraska. In Table 1 were placed the number and percent of returned questionnaires received by the occupational areas. The percent of returns ranged from a low of 26.08 in Food Service Occupations with 97 of 372 questionnaires returned to a high of 67.93 percent for Governmental State and Federal Agencies with 36 of 53 completed questionnaires received.

Numerals shown in Table 1 indicated that the number of questionnaires sent to the 13 occupational groups varied from a low of 17 in the Aircraft Industry to 390 in the Sales and Service Occupations. The total number of useable questionnaires returned was 755 or 33.68 percent. An additional 120 questionnaires, 5.35 percent, were returned with letters explaining that the business was not applicable to the survey or were returned because of business closings and retirements. The total percent returned was 39.03 percent or 875 of the original 2,242 questionnaires mailed. Personal interviews were conducted by a team of graduate students in Education at Iowa State University of Science and Technology of the 133 largest employers of Merged Area XIII. These firms were enclusive of all firms employing 100 or more employees. This effort resulted in 117 completed questionnaires of the 133 for an 88 percent return. Personnel directors who were interviewed were most cooperative and were very interested in

Table 1. Number and percent of questionnaires received by occupational field

Occupational questionnaire	Number of questionnaires sent	Questionnaires returned, useable		Mail, returned, not applicable, letter replies and discontinued businesses		Total questionnaires returned	
		number	percent	number	percent	number	percent
Agricultural related	226	71	31.42	8	3.53	79	34.96
Aircraft Mechanics and Maintenance	17	6	35.29	2	11.76	8	47.06
Automotive and Diesel	225	61	27.11	10	4.44	71	31.56
Construction	286	90	31.47	14	2.89	104	36.36
Food Service	372	79	21.24	18	4.83	97	26.08
Governmental State and Federal	53	32	60.38	4	7.54	36	67.93
Governmental State and Local	158	93	58.86	12	7.59	105	66.46
Health	85	36	42.35	2	2.35	38	44.71
Manufacturing and Industrial	103	41	39.81	6	5.83	47	45.63
Office and Data Processing	226	102	45.13	15	6.64	117	51.77
Printing and Publishing	65	32	49.23	6	9.23	38	58.46
Sales and Service	390	102	26.15	21	5.39	123	31.54
Textile	36	10	27.78	2	5.56	12	33.33
Total	2,242	755	33.68	120	5.35	875	39.03

assisting the area school.

Anticipated Employment Level and Need for Trained Workers by Occupational Instructional Program and Job Title

The enumeration in Tables 2-16 presented the anticipated employment level and the need for trained workers by occupational instructional program, and job titles for each of the 15 major occupational areas.

The code is interpreted as follows: Each Roman numeral indicated a major occupational field; each capital letter, a suggested course to train workers for the job titles listed; and each numeral represented a job title used in the survey.

Questionnaires sought an estimate of the number of workers in each job title which would be needed by January 1, 1969 and by January 1, 1971.

Inspection of Table 2 revealed that 309 more employees in the major occupational area of Agriculture Related Occupations were needed by January 1, 1969 and 775 by January 1, 1971. The greatest number needed to be trained were reported in the job titles of: Sales, Grain and Feed, 72 by January 1, 1969 and 212 by January 1, 1971; Truck Driver, Heavy, 66 by January 1, 1969 and 155 by January 1, 1971; Salesman Driver, 49 by January 1, 1969 and 136 by January 1, 1971; and Nursery Worker, 28 by January 1, 1969 and 64 by January 1, 1971.

Totals in the major occupational area of Aircraft Mechanic and Maintenance, illustrated in Table 3, were relatively small. The largest total needing to be trained by January 1, 1971 was 55 in the job title of Aircraft and Engine Mechanic. However, each category except Hydraulic Tester and Lineman needed at least as many others trained by January 1, 1971, as are presently employed, with several categories indicating anti-

Table 2. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for agricultural related occupations

Code:
I. Major Occupational Field
A. Proposed course to train workers for the job titles listed below
1. Job titles used in the survey

	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
I. Agricultural Related Occupations									
A. Food processing									
1. Chopping-machine operator	4	4	4	0	0	0	1	0	1
2. Meat grader	12	14	17	2	5	1	4	3	9
3. Grader, commercial commodities	46	60	65	14	19	5	18	19	37
4. Dairy processing equipment operator	31	35	34	4	3	3	11	7	14
5. Laboratory tester	29	31	32	2	3	3	9	5	12
6. Laboratory supervisor	5	5	6	0	1	1	2	1	3
Sub-total	127	149	158	22	31	13	45	35	76
B. Agricultural machinery									
1. Farm equipment mechanic	33	39	43	6	10	3	12	9	22
2. Farm equipment mechanic helper	8	9	9	1	1	1	3	2	4
3. Farm machinery set-up man	21	27	28	6	7	2	8	8	15
4. Agri. machinery parts man	28	31	33	3	5	3	9	6	14
5. Agri. machinery welder	7	7	7	0	0	1	2	1	2
6. Salesman agri. machinery	17	19	19	2	2	2	6	4	8

Table 2. (continued)

Code:
I. Major Occupational Field
A. Proposed course to train workers for the job titles listed below
1. Job titles used in the survey

	Present number of employees	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
	Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
7. Assembly repairman agri. machinery	3	4	4	1	1	0	1	1	2
Sub-total	117	136	143	19	26	12	41	31	67
C. Feed and seed service									
1. Seed processing specialist*	2	2	2	0	0	0	1	0	1
2. Agri. feed mix specialist	24	24	25	0	1	2	7	2	8
3. Feed research aide	3	3	4	0	1	0	1	0	2
4. Sales grain and feed	386	419	472	33	86	39	126	72	212
Sub-total	415	448	503	33	88	41	135	74	223
D. Not grouped									
1. Poultry technician	3	3	4	0	0	0	1	0	2
2. Salesman-driver	404	413	416	9	12	40	124	49	136
3. Truck driver, heavy	326	359	373	33	47	33	108	66	155
4. Floral designer	6	8	10	2	4	1	2	3	6
5. Nursery worker	130	145	150	15	20	13	44	28	64
6. Sprayer	9	12	14	3	5	1	4	4	9
7. Serviceman, liquid fertilizer	9	14	15	5	6	1	4	6	10
8. Salesperson, general hardware	7	12	13	5	6	1	4	6	10
9. Conservation technician*	12	15	20	3	8	1	5	4	13

*Job titles added by employers

Table 2. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment Jan. 1 1969	Anticipated employment Jan. 1 1971	Increased employment over September 30, 1967, level Jan. 1 1969	Increased employment over September 30, 1967, level Jan. 1 1971	Employee turnover estimated at 10%/year Jan. 1 1969	Employee turnover estimated at 10%/year Jan. 1 1971	Number needed to be trained by Jan. 1 1969	Number needed to be trained by Jan. 1 1971
10. Conservation Specialist*	5	7	7	2	2	1	2	3	4
Sub-total	911	988	1022	77	110	92	298	169	409
Total	1570	1721	1826	151	255	158	519	309	775

Table 3. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for aircraft mechanic and maintenance occupations

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
II. Aircraft Mechanic and Maintenance									
A. Aircraft and engine mechanic									
1. Aircraft and engine mechanic	56	73	89	17	33	6	22	23	55
2. Airplane inspector	9	20	24	11	15	1	6	12	21
3. Flight test shop mechanic	2	2	4	0	2	0	1	0	3
4. Aircraft engine tester	2	4	6	2	4	0	1	2	5
5. Supercharger mechanic	1	3	3	2	2	0	1	2	3
6. Hydraulic tester	3	3	4	0	1	0	1	0	2
7. Carburetor man	2	4	5	2	3	0	1	2	4
8. Instrument man	0	2	2	2	2	0	1	2	3
9. Lineman	23	32	35	9	12	2	10	11	22
10. Mechanic, flowmeter test and certification	2	4	5	2	3	0	1	2	4
11. Airline agent*	17	22	30	5	13	2	7	7	20
12. Airport serviceman	1	2	2	1	1	0	1	1	2
Total	118	171	209	53	91	11	53	64	144

*Job titles added by employers

cipated needs as much as twice as great as the number currently employed.

As noted in Table 4, a total of 297 more people were needed by January 1, 1969, and 802 by January 1, 1971, in the Automotive and Diesel Occupations. The largest total was in the job title of Tractor-Trailer Truck Driver, which reported a total of 97 needed to be trained by January 1, 1969, and 343 by January 1, 1971. The category of Automobile Mechanic showed a need of 104 new people by January 1, 1971, while Light Truck Driver showed a need of 75 trained by January 1, 1971.

Table 5 presented data pertaining to the Construction Industry. Notably large increases in the number of employees anticipated were found in the categories of: Carpenter, from the present number of 424 to 533 by 1971; Laborer (Construction) from the present number of 357 to 480 by 1971; Heavy Equipment Operator from the present number of 206 to 249 by 1971; and Estimator from 71 to 119 by 1971. It is interesting to observe that the job title of Spray Painter decreases 19 employees by 1971 with only one needed to be trained by that date.

Data pertaining to Food Service Occupations were given in Table 6. The job title revealing the largest number needing to be trained by 1971 is Waiter and Waitress, needing 436. Categories in which 100 or more workers needed to be trained by 1971 included: Grocery Stock Clerk, 300; Cook, 268; Cashier, 262; Kitchen Helper (washer), 116; Cook's Helper, 103; and Busboy, 100. Total for the major occupational area was 1,757 needed by January 1, 1971 and 711 needed by January 1, 1969.

The enumeration in Table 7 indicates only a slight increase in the anticipated number of employees by 1971 in the major job titles found in Governmental State and Federal Agencies. The greatest number needed to be

Table 4. Anticipated employment level and need for trained workers by occupational instructional programs and job title January 1, 1969 and January 1, 1971, for automotive and diesel occupations

Code: I. Major Occupational Field / A. Proposed course to train workers for the job titles listed below / 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
III. Automotive and Diesel									
A. Automotive mechanics									
1. Automobile mechanic	134	170	187	36	53	13	51	49	104
2. Automotive tune-up mechanic	27	32	36	5	9	3	10	8	19
3. Front end alignment man	6	9	13	3	7	1	3	4	10
4. Transmission mechanic	4	5	5	1	1	0	2	1	3
5. Brakeman, automobile	9	11	12	2	3	1	3	3	6
6. Automobile air conditioning mechanic	3	4	5	1	2	0	1	1	3
7. Automobile parts man	53	61	66	8	13	5	18	13	31
Sub-total	236	292	324	56	88	23	88	79	176
B. Automobile Body Repair									
1. Automobile body repair	34	45	48	11	14	3	14	14	28
2. Automobile spray painter	12	13	14	1	2	1	4	2	6
Sub-total	46	58	62	13	16	4	18	16	34
C. Automobile Servicing									
1. Automobile service station attendant	103	118	126	15	23	10	35	25	58

Table 4. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
2. Automobile maintenance mechanic	36	45	50	9	14	4	14	13	28
3. Tire repairman	86	98	111	12	25	9	29	21	54
Sub-total	225	261	287	36	62	23	78	59	140
D. Diesel and equipment maintenance									
1. Diesel mechanic	33	38	50	5	17	3	11	8	28
2. Auto machinist*	4	4	4	0	0	0	1	0	1
3. Gasoline engine repairman (2- and 4-cycle)	1	2	2	1	1	0	1	1	2
Sub-total	38	44	56	6	18	3	13	9	31
E. Not Grouped									
1. Bus driver, commercial*	232	232	232	0	0	23	67	23	67
2. Sales representative, auto	8	8	8	0	0	1	2	1	2
3. Tractor-trailer truck driver	351	413	570	62	219	35	124	97	343
4. Light truck driver	139	161	166	22	27	14	48	36	75
Sub-total	730	814	976	84	246	73	241	157	487
Total	1275	1469	1705	195	430	126	438	320	868

*Job titles added by employers

Table 5. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for construction industries

Code:
I. Major Occupational Field
A. Proposed course to train workers for the job titles listed below
1. Job titles used in the survey

Present number of employees Sept. 30, 1967	Anticipated employment Jan. 1 1969	Anticipated employment Jan. 1 1971	Increased employment over September 30, 1967, level Jan. 1 1969	Increased employment over September 30, 1967, level Jan. 1 1971	Employee turnover estimated at 10%/year Jan. 1 1969	Employee turnover estimated at 10%/year Jan. 1 1971	Number needed to be trained by Jan. 1 1969	Number needed to be trained by Jan. 1 1971
IV. Construction								
A. Heavy equipment operator								
1. Heavy equipment operator	206	239	249	33	43	21	72	54	115
2. Bulldozer operator	54	66	70	12	16	5	20	17	36
3. Dragline operator	29	35	39	6	10	3	11	9	21
4. Power shovel operator	5	6	7	1	2	1	2	2	4
5. Front loader operator*	10	12	14	2	4	1	4	3	8
6. Scraper operator*	21	25	29	4	8	2	8	6	15
7. Motor grader operator*	9	11	13	2	4	1	3	3	7
Sub-total	334	394	421	60	87	34	120	94	206
B. Carpentry									
1. Carpenter, foreman	103	113	129	10	26	10	34	20	60
2. Carpenter	424	476	533	52	109	42	143	94	252
3. Floor layer	38	40	43	2	5	4	12	6	17
4. Roofer	88	99	121	11	33	9	30	20	63
5. House repairman	88	100	104	12	16	9	30	21	46
Sub-total	741	828	930	87	189	74	249	161	438
C. Plumbing									
1. Plumber	61	68	70	7	9	6	20	13	29
2. Pipe fitter	40	49	50	9	10	4	15	13	25
Sub-total	101	117	120	16	19	10	35	26	54

*Job titles added by employers

Table 5. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
D. Painting									
1. Painter, spray	81	65	62	0	0	8	20	1	2
2. Painter, brush*	35	37	41	2	6	4	11	6	17
Sub-total	116	102	103	2	6	12	31	7	19
E. Electrician									
1. Electrician	62	82	91	20	29	6	25	26	54
2. Lineman (phone and electric)	22	25	28	3	6	2	8	5	14
Sub-total	84	107	119	23	35	8	33	31	68
F. Brick-Block-Concrete Training									
1. Bricklayer, mason	87	97	112	10	25	9	29	19	54
2. Concreting foreman	19	22	24	3	5	2	7	5	12
3. Concrete batching and mixing plant foreman	11	12	13	1	2	1	4	2	6
4. Concrete mixer operator	9	12	13	3	4	1	4	4	8
5. Concrete mixing truck operator	201	203	203	2	2	20	61	22	63
6. Concrete paving machine operator	0	1	1	1	1	0	0	1	1
Sub-total	327	347	366	20	39	33	105	53	144
G. Construction maintenance									
1. Construction maintenance (heavy equipment mechanic)	29	33	35	4	6	3	10	7	16

Table 5. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
2. Construction equipment mechanic	27	33	36	6	9	3	10	9	19
Sub-total	56	66	71	10	15	6	20	16	35
H. Not grouped									
1. Plasterer	27	28	28	1	1	4	8	4	9
2. Laborer, construction	357	412	480	55	123	36	124	91	247
3. Structural steel worker	94	100	106	6	12	9	30	15	42
4. Estimator	71	106	119	35	48	7	32	42	80
5. Tile layer*	7	8	15	1	8	1	2	2	10
6. Designer, interior*	2	3	4	1	2	0	1	1	3
Sub-total	558	657	752	99	194	56	197	155	391
Total	2317	2618	2882	317	584	233	790	543	1355

Table 6. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for food service occupations

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
V. Food Service Occupations									
A. Commercial Cooking									
1. Executive chef	28	32	33	4	5	3	10	7	15
2. Chef	70	74	77	4	7	7	22	11	30
3. Cook	436	505	552	69	116	44	152	113	268
4. Cook's helper	230	250	258	20	28	23	75	43	103
Sub-total	764	861	920	97	156	77	259	174	416
B. Commercial baking									
1. Baker	40	43	45	3	5	4	13	7	18
2. Bakery helper	7	7	7	0	0	1	2	1	2
Sub-total	47	50	52	3	5	5	15	8	20
C. Host and cashier training									
1. Host	18	18	18	0	0	2	5	2	5
2. Hostess	42	47	47	5	5	4	14	9	19
3. Cashier	514	576	603	62	89	51	173	113	162
Sub-total	574	641	668	67	94	57	192	124	286
D. Waiter training									
1. Waiter and waitress	854	968	1000	114	146	85	290	199	436
2. Busboy	285	293	297	8	12	29	88	37	100

Table 6. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
3. Kitchen helper (washer)	286	305	310	19	24	29	92	48	116
4. Bellhop	30	31	32	1	2	3	9	4	11
Sub-total	1455	1597	1639	142	184	146	479	288	663
E. Retail									
1. Meat cutter (butcher)	184	189	198	5	14	18	57	23	71
2. Grocery stock clerk	648	686	744	38	96	65	223	94	300
3. Produce manager*	4	4	4	0	0	0	1	0	1
Sub-total	836	879	946	43	110	83	281	117	372
Total	3676	4028	4225	352	549	368	1226	711	1757

*Job titles added by employers

Table 7. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for governmental state and federal agencies

Code:
I. Major Occupational Field
A. Proposed course to train workers for the job titles listed below
1. Job titles used in the survey

Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
VI. Governmental State and Federal								
A. Central office specialists								
1. Contract specialist	16	16	18	0	2	2	5	2	7
2. Title clerk	2	2	2	0	0	0	1	0	1
3. Civil service clerk	2	2	2	0	0	0	1	0	1
4. Post office clerk	76	78	78	0	2	8	23	8	25
Sub-total	96	98	100	0	4	10	30	10	34
B. Not grouped									
1. Photographer	1	1	1	0	0	0	1	0	0
2. Traffic technician	8	10	12	2	4	1	3	3	7
3. Building inspector	3	4	4	1	1	0	1	1	2
4. Fire inspector	2	2	2	0	0	0	1	0	1
5. Mail carrier	78	81	80	3	2	8	24	11	26
Sub-total	92	98	99	6	7	9	30	15	36
Total	188	196	199	6	11	19	60	25	70

trained by 1971 were listed in the job titles of: Mail Carrier, 26, and Post Office Clerk, 25.

Examination of Table 8 shows that 489 more employees in the major occupational area of Governmental State and Local Agencies were needed by January 1, 1969 and 1,242 by January 1, 1971. The largest total was in the job title of Custodian, which reported a total of 293 needed to be trained by January 1, 1969 and 693 by January 1, 1971. The category of Maintenance man showed a need of 124 new employees by January 1, 1971, while Equipment Operator needed 120 and Policeman needed 86 trained by January 1, 1971.

Totals demonstrated a high demand for Health Occupations employees. A total of 1,101 was reported needed by January 1, 1969, with 2,838 needed by January 1, 1971. Inspection of Table 9 illustrated the highest demand existed in the category of Nurse, Associate Degree, which needed 341 newly trained people by January 1, 1969 and 896 by January 1, 1971. Orderlies and Nurse's Aides also had a high demand of 332 and 890, respectively, by January 1, 1969 and January 1, 1971. The category of Nurse (Licensed Practical) indicated a need of 377 new employees by January 1, 1971, while Medical Secretary needed 155 and Medical Assistant needed 112 trained by January 1, 1971. Employers anticipated a demand for new workers at least equal to or perhaps greater than present employment by January 1, 1971 in the categories of Attendant, Surgical Technician, Occupational Therapy Aide, and Inhalation Therapist. The Dental Laboratory Technician was noted to employ only three persons now, with eight new workers needed to be trained by January 1, 1971.

Data for Manufacturing and Industrial Occupations are shown in Table

Table 8. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for governmental state and local agencies

Code:
I. Major Occupational Field
A. Proposed course to train workers for the job titles listed below
1. Job titles used in the survey

	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
VII. Governmental State and Local									
A. Governmental office									
1. Assessor	22	22	22	0	0	2	7	2	7
2. Building inspector	11	17	18	6	7	1	5	7	12
3. Purchasing agent	7	7	7	0	0	1	2	1	2
4. Town clerk	41	41	42	0	1	4	12	4	13
5. Water service dispatcher	6	7	7	1	1	1	2	2	3
6. Typist and clerk typist	5	5	9	0	4	1	2	1	6
Sub-total	92	99	105	7	13	10	30	17	43
B. Law enforcement									
1. Policeman	171	181	203	10	32	17	54	27	86
2. Policewoman	4	4	5	0	1	0	1	0	2
3. Deputy sheriff	14	14	14	0	0	1	4	1	4
Sub-total	189	199	222	10	32	18	59	28	92
C. Repair and service									
1. Electric-meter repairman	1	1	1	0	0	0	0	0	0
2. Street-light serviceman	2	2	2	0	0	0	1	0	1
3. Water-meter repairman	7	7	7	0	0	1	2	1	2
4. Parking-meter serviceman	4	4	4	0	0	0	1	0	1
Sub-total	14	14	14	0	0	1	4	1	4

Table 8. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
D. Equipment operators									
1. Equipment operator	279	287	313	8	34	28	86	36	120
2. Pump-station operator, waterworks	22	24	24	2	2	2	7	4	9
3. Senior-sewage plant operator	5	7	7	2	2	1	2	3	4
4. Sewage plant operator	16	17	18	1	2	2	5	3	7
5. Incinerator operator	1	1	1	0	0	0	0	0	0
Sub-total	323	336	363	13	40	33	100	46	140
E. Maintenance									
1. Custodian	1449	1597	1663	148	214	145	479	293	693
2. Maintenance man	299	315	328	16	29	30	95	46	124
3. General purpose mechanic	30	32	33	2	3	3	10	4	13
4. Boiler engineer*	15	15	15	0	0	2	5	2	5
5. Maintenance supervisor*	33	43	54	10	21	3	13	13	34
Sub-total	1826	2002	2093	176	267	183	602	359	869
F. Not grouped									
1. Fireman	76	78	80	2	4	8	23	10	27
2. Library assistant	24	29	32	5	8	2	9	7	17
3. Nurse, public and school	71	79	84	8	13	7	23	15	36
4. Cook head, school cafeteria	38	40	40	2	2	4	12	6	14
Sub-total	209	226	236	17	27	21	67	38	94
Total	2653	2876	3033	223	379	266	862	489	1242

*Job titles added by employers

Table 9. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for health occupations

Code: I. Major Occupational Field; A. Proposed course to train workers for the job titles listed below; 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment Jan. 1 1969	Anticipated employment Jan. 1 1971	Increased employment over September 30, 1967, level Jan. 1 1969	Increased employment over September 30, 1967, level Jan. 1 1971	Employee turnover estimated at 10%/year Jan. 1 1969	Employee turnover estimated at 10%/year Jan. 1 1971	Number needed to be trained by Jan. 1 1969	Number needed to be trained by Jan. 1 1971
VIII. Health Occupations									
A. Nurse, Associate Degree									
1. Nurse, Associate Degree or R.N.	1202	1423	1671	221	469	120	427	341	896
Sub-total	1202	1423	1671	221	469	120	427	341	896
B. Nurse, Licensed Practical									
1. Nurse, licensed practical	432	542	646	110	214	43	163	153	377
Sub-total	432	542	646	110	214	43	163	153	377
C. Aides									
1. Orderlies and Nurse's Aides	1416	1607	1824	191	408	142	482	332	890
2. Attendants	19	25	32	6	13	2	8	8	21
Sub-total	1435	1632	1856	197	421	144	490	340	911
D. Medical assistants									
1. Medical assistant	165	205	215	40	50	17	62	57	112
2. Medical secretary	119	170	223	51	104	12	51	63	155
3. Medical record librarian	17	19	21	2	4	2	6	4	10
4. Medical record clerk	65	71	82	6	17	7	21	13	38
Sub-total	366	465	541	99	175	38	140	137	315

Table 9. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
E. Operating room technician									
1. Surgical technician	64	106	140	42	76	6	32	48	108
Sub-total	64	106	140	42	76	6	32	48	108
F. Medical laboratory assistant									
1. Medical laboratory assistant	128	151	188	23	60	13	45	36	105
Sub-total	128	151	188	23	60	13	45	36	105
G. Dental laboratory assistant									
1. Dental laboratory assistant	3	5	9	2	6	0	2	2	8
Sub-total	3	5	9	2	6	0	2	2	8
H. Dental assistant									
1. Dental assistant	8	9	10	1	2	1	3	2	5
Sub-total	8	9	10	1	2	1	3	2	5
I. Not grouped									
1. X-ray technician, radiologic technologist	68	74	88	6	20	7	22	13	42
2. Occupational therapy aide	18	22	27	4	9	2	7	6	16
3. Inhalation therapist	7	11	12	4	5	1	3	5	8
4. Optician	78	88	98	10	20	8	26	18	46
5. EKG and EE technician*	2	2	2	0	0	0	1	0	1
Sub-total	173	197	227	24	54	18	59	42	113
Total	3811	4530	5288	719	1477	383	1361	1101	2838

*Job titles added by employers

10. A wide range of job titles are included in this major occupational field, and correspondingly large numbers of personnel were listed. A total of 553 persons needed to be trained by January 1, 1969 with 1,290 needed by January 1, 1971. Several job titles reported 75 or more new employees needed to be trained by January 1, 1971: Light Metal Assembler, 121; Machinist, 115; Screw Machine Set-up Operator, 110; Press Operator, Sheet Metal, 83; and Welder (Arc), 78.

As presented in Table 11, a varied demand existed for workers in Office Occupations. A total of 1,167 more employees were needed by January 1, 1969 and 3,128 by January 1, 1971. In listing the proposed courses to train workers for a cluster of job skills, General Clerical demonstrated a need for 642 by January 1, 1969 and 1,725 by January 1, 1971, while Secretarial Science showed 272 more employees were needed by January 1, 1969 and 722 by January 1, 1971. General Accounting employees are needed to fill a demand of 242 by January 1, 1969 and 648 by January 1, 1971.

The greatest need indicated in the major area of Office Occupations was General Clerk with a need of 235 by January 1, 1969 and 656 by January 1, 1971. Five hundred forty-five Secretaries, and 521 Typist and Clerk-Typists are needed by January 1, 1971. Other job titles revealing 100 or more need to be trained by January 1, 1971 were: Accounting Clerk, 307; Stenographer, 171; Shipping and Receiving Clerk, 145; Bookkeeper, 135; and Transcribing Machine Operator (Dictaphone), 120.

Table 12 projected data illustrating anticipated employment level and need for trained workers by occupational instructional program and job titles by January 1, 1969 and January 1, 1971 for Data Processing Occupa-

Table 10. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for manufacturing and industrial occupations

Code: I. Major Occupational Field; A. Proposed course to train workers for the job titles listed below; 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over Sept. 30, 1967 level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
IX. Manufacturing and Industrial									
A. Machinist, tool and die maker									
1. Machinist	182	213	233	31	51	19	64	50	115
2. Tool and die maker	77	90	106	13	29	7	27	20	56
3. Inspector, floor	63	70	78	7	15	7	21	14	36
4. Inspector, gage	25	25	26	0	1	3	8	3	9
5. Inspector, general	73	74	79	1	6	7	22	8	28
6. Set-up man (job setter)	23	26	32	3	9	2	8	5	17
7. Die setter	34	38	42	4	8	3	11	7	19
8. Heat treater	12	13	13	1	1	1	4	2	5
Sub-total	489	549	609	60	120	49	165	109	285
B. Machine operators									
1. Engine lathe set-up operator	35	35	37	0	2	3	10	3	12
2. Turret lathe set-up operator	8	8	8	0	0	1	2	1	2
3. Milling machine set-up operator	14	16	16	2	2	1	5	3	7
4. Grinding machine operator	17	23	29	6	12	2	7	8	19
5. Screw machine set-up operator	146	177	203	31	57	15	53	46	110
6. Drill press operator	68	73	78	5	10	7	22	12	32
7. Saw and shear operator*	0	2	2	2	2	0	1	2	3
8. Packing machine operator*	8	9	11	1	3	1	3	2	6
Sub-total	296	343	384	47	88	30	103	77	191

*Job titles added by employers

Table 10. (continued)

Code: I. Major Occupational Field — A. Proposed course to train workers for the job titles listed below — 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment Jan. 1 1969	Anticipated employment Jan. 1 1971	Increased employment over Sept. 30, 1967, level Jan. 1 1969	Increased employment over Sept. 30, 1967, level Jan. 1 1971	Employee turnover estimated at 10%/year Jan. 1 1969	Employee turnover estimated at 10%/year Jan. 1 1971	Number needed to be trained by Jan. 1 1969	Number needed to be trained by Jan. 1 1971
C. Pattern making									
1. Machine molder	47	59	64	12	17	5	18	17	35
2. Coremaker	27	29	34	2	7	3	9	5	16
Sub-total	74	88	98	14	24	8	27	22	51
D. Industrial mechanic									
1. Maintenance mechanic	143	158	169	15	26	14	47	29	73
2. Stationary engineer	8	9	9	1	1	1	3	2	4
Sub-total	151	167	178	16	27	15	50	31	77
E. Sheet metal									
1. Lay-out man	25	31	31	6	6	3	9	9	15
2. Pattern maker, metal	11	19	20	8	9	1	6	9	14
3. Sheet metal worker	73	82	90	9	17	7	25	16	42
4. Press operator, sheet metal*	120	144	160	24	40	12	43	36	83
5. Fabricators*	8	9	9	1	1	1	3	2	4
6. Metal plater*	13	15	17	2	4	2	5	4	9
7. Light metal assembler	86	136	166	50	80	9	41	59	121
Sub-total	336	436	493	100	157	35	132	135	288
F. Welding									
1. Welder, gas	13	15	17	2	4	1	5	3	9
2. Welder, arc	110	135	147	25	37	11	41	36	78
3. Welder, combination	94	121	128	27	34	9	36	36	70

Table 10. [redacted] (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
4. Welder, heliarc	17	18	20	1	3	2	5	3	8
Sub-total	234	289	312	55	78	23	87	78	165
G. Mechanical technology									
1. Metallurgist assistant (technician)	4	4	4	0	0	0	1	0	1
2. Mechanical engineering technician	29	37	43	8	14	3	11	11	25
3. Draftsman, mechanical	76	97	108	21	32	8	29	29	61
Sub-total	109	138	155	29	46	11	41	40	87
H. Electrical technician									
1. Electrical technician	22	24	26	2	4	2	7	4	11
2. Electro-mechanical technician	4	4	4	0	0	0	1	0	1
Sub-total	26	28	30	2	4	2	8	4	12
I. Industrial electronics									
1. Instrumentation technician	7	9	10	2	3	1	3	3	6
2. Electronic technician	23	25	29	2	6	2	8	4	14
Sub-total	30	34	39	4	9	3	11	7	20
J. Architectural draftsman									
1. Draftsman, architectural	87	105	113	18	26	9	32	27	58

Table 10. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
2. Draftsman, map	12	18	20	6	9	1	5	7	13
3. Draftsman, civil*	1	2	3	1	2	0	1	1	3
Sub-total	100	125	136	25	37	10	38	35	74
K. Electronic draftsman									
1. Draftsman, electrical	17	20	23	3	6	2	6	5	12
2. Draftsman, electronic	7	7	7	0	0	1	2	1	2
Sub-total	24	27	30	3	6	3	8	6	14
L. Not grouped									
1. Chemical laboratory technician	8	8	10	0	2	1	2	1	4
2. Fork lift truck driver*	8	8	8	0	0	1	2	1	2
3. Heat seal operator*	4	4	4	0	0	0	1	0	1
4. Custom woodworking*	59	60	60	1	1	6	18	7	19
Sub-total	79	80	84	1	3	8	23	9	26
Total	1948	2304	2548	356	600	197	693	553	1290

Table 11. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for office occupations

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
X. Office Occupations									
A. Secretarial Science									
1. Secretary	1175	1263	1341	88	166	118	379	206	545
2. Executive secretary*	16	17	17	1	1	2	5	3	6
3. Stenographer	396	419	441	23	45	40	126	63	171
Sub-total	1587	1699	1799	112	212	160	510	272	722
B. General Clerical									
1. Transcribing machine operator (dictaphone)	220	247	266	27	46	22	74	49	120
2. Typist and clerk-typist	1168	1253	1313	85	145	117	376	202	521
3. Receptionist	134	140	147	6	13	13	42	19	55
4. Telephone operator (PBX)	183	193	203	10	20	18	58	28	78
5. General Clerk	1511	1595	1688	84	177	151	479	235	656
6. Shipping and receiving clerk	338	356	376	18	38	34	107	52	145
7. Stock clerk	203	216	232	13	29	20	65	33	94
8. Duplicating machine operator	76	80	82	4	6	8	24	12	30
9. Collator operator	23	29	30	6	7	2	9	8	16
10. Encoder operator*	18	20	22	2	4	2	6	4	10
Sub-total	3874	4129	4359	255	485	387	1240	642	1725

*Job titles added by employers

Table 11. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment Jan. 1 1969	Anticipated employment Jan. 1 1971	Increased employment over September 30, 1967, level Jan. 1 1969	Increased employment over September 30, 1967, level Jan. 1 1971	Employee turnover estimated at 10%/year Jan. 1 1969	Employee turnover estimated at 10%/year Jan. 1 1971	Number needed to be trained by Jan. 1 1969	Number needed to be trained by Jan. 1 1971
C. General accounting									
1. Accounting clerk	761	796	829	35	68	76	239	111	307
2. Billing machine operator	95	105	110	10	15	10	32	20	47
3. Bookkeeper	318	340	351	22	33	32	102	54	135
4. Bookkeeping machine operator	149	154	163	5	14	15	46	20	60
5. Calculating machine operator	86	90	92	4	6	9	27	13	33
6. Statistical clerks and compilers	144	154	164	10	20	14	46	24	66
Sub-total	1553	1639	1709	86	156	156	492	242	648
D. Not grouped									
1. Underwriter*	17	17	19	0	2	2	5	2	7
2. Tellers, bank*	57	58	60	1	2	6	17	7	20
3. Proofreaders*	9	9	10	0	1	1	3	1	4
4. Salesman, general	7	7	7	0	0	1	2	1	2
Sub-total	90	91	96	1	6	10	27	11	33
Total	7104	7558	7963	454	859	713	2269	1167	3128

Table 12. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for data processing occupations

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
XI. Data Processing									
A. Programmer									
1. Digital computer operator	124	89	94	0	0	12	27	0	0
2. Programmer	202	222	231	20	29	20	67	40	96
3. Systems analyst	75	86	88	11	13	8	26	19	39
4. Supervisor, machine room	26	25	25	0	0	3	8	2	7
Sub-total	427	422	438	31	42	43	128	61	142
B. Punch card accounting									
1. Keypunch operator	329	337	345	8	16	33	101	41	117
2. Tabulating machine operator	41	42	43	1	2	4	13	4	15
3. Data processing maintenance serviceman	4	4	4	0	0	0	1	0	1
4. Tape librarian*	1	1	1	0	0	0	0	0	0
Sub-total	375	384	393	9	18	37	115	46	113
Total	802	806	831	40	60	80	243	107	275

*Job title added by employers

tions. The total needed for Data Processing Occupations by January 1, 1969 was 107, while 275 were reported needed to be trained by January 1, 1971. Highest totals were in the job title of Key Punch Operator, with 41 needed to be trained by January 1, 1969 and 117 by January 1, 1971. In the job titles for employees who could be trained in a course in Programming, the job title Programmer demonstrates a need of 96 by January 1, 1971. It is interesting to note that Digital Computer Operator will decrease by 30 the anticipated employment by January 1, 1971, and none will be needed to be trained.

Analysis of Table 13 showed a total of 105 people needed by January 1, 1969 and 387 by January 1, 1971 in Printing, Publishing and Allied Industries. The job titles contributing the largest numbers to these totals were: Compositor (Typographer), 27 by January 1, 1969, 65 by January 1, 1971; Off-set Pressman, 19 by January 1, 1969, 38 by January 1, 1971; Linotype Operator, 15 by January 1, 1969 and 39 by January 1, 1971. The category of Job Printer reported present employment of only 30, with 30 new people needed to be trained by January 1, 1971.

Table 14 summarized data for Sales Occupations. A total of 696 persons were needed to be trained for this field by January 1, 1971, with 288 needed in the near future of January 1, 1969. The largest total was in the job title of Sales Representative which listed a total of 67 needed to be trained by January 1, 1969 and 176 by January 1, 1971. The job title of Sales Clerk indicated a need of 169 new people by January 1, 1971 while General Salesman needed 169 and Salesman, Women's and Girls' Apparel, needed 99 trained by January 1, 1971.

Inspection of Table 15 showed a total of 44 persons needed by January

Table 13. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for printing, publishing and allied industries

Code:
I. Major Occupational Field
A. Proposed course to train workers for the job titles listed below
1. Job titles used in the survey

	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
XII. Printing, Publishing and Allied Industries									
A. Photo off-set printing									
1. Foreman, printing shop	71	76	78	5	7	7	23	12	30
2. Off-set pressman	55	68	73	13	18	6	20	19	38
3. Silk screen printer	3	3	4	0	1	0	1	0	2
4. Job printer	30	39	48	9	18	3	12	12	30
5. Photo engraver	16	18	19	2	3	2	5	4	8
6. Photographer (litho)	28	32	36	4	8	3	10	7	18
7. Photographer (news)	15	15	15	0	0	2	5	2	5
8. Multilith operator	27	29	32	2	5	3	9	5	14
9. Folding machine operator	24	26	29	2	5	2	8	4	13
10. Commercial artist (illustrator)	26	23	25	0	0	3	7	0	6
Sub-total	295	329	359	37	65	31	100	65	164
B. Letter press printer									
1. Platen and letter pressman	50	56	59	6	9	5	17	11	26
2. Linotype operator	104	109	110	5	6	10	33	15	39
3. Compositor (typographer)	169	179	180	10	11	17	54	27	65
4. Bookbinder	37	38	43	1	6	3	1	4	17
5. Linotype machinist	14	15	15	1	1	1	5	2	6
6. Bindery small machine*	12	15	16	3	4	1	5	4	9
Sub-total	386	412	423	26	37	37	125	63	162

*Job titles added by employers

Table 13. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
C. Not grouped									
1. Ink matcher*	2	2	2	0	0	0	1	0	1
2. Cameraman radio and television	6	6	6	0	0	1	2	1	2
3. Plate maker (caster)*	28	31	31	3	3	3	9	6	12
4. Cutter operator	26	28	32	2	6	3	8	5	14
5. Web pressman*	51	56	61	5	10	5	17	10	27
6. Cylinder pressman*	4	4	4	1	1	0	1	1	2
7. Machinist press sterotype*	4	4	4	0	0	0	1	0	1
8. Sales representative	2	2	3	0	1	0	1	0	2
Sub-total	122	133	143	11	21	12	40	22	61
Total	803	874	925	74	123	80	265	150	387

Table 14. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969, and January 1, 1971, for sales occupations

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
XIII. Sales Occupations									
A. Mid-management marketing									
1. Sales representative	339	372	403	33	64	34	112	67	176
2. Salesman, general	182	219	254	36	71	18	66	54	137
3. Salesman, footwear	10	11	11	1	1	1	3	2	4
4. Salesman, gas or electric appliances	2	2	2	0	0	0	1	0	1
5. Salesman, hardware supplies	16	18	18	2	2	2	5	4	7
6. Salesman, men's and boys' clothing	11	12	14	1	3	1	4	2	7
7. Salesman, radio and television parts	8	8	8	0	0	1	2	1	2
8. Salesman, women's and girls' apparel	293	298	303	5	10	29	90	34	99
9. Salesman, advertising*	13	13	13	0	0	1	4	1	4
10. Salesman, radio and television time*	9	9	9	0	0	1	3	1	3
Sub-total	884	962	1035	78	151	88	290	166	440
B. Retail selling									
1. Sales clerk	321	376	377	55	56	32	113	87	169
2. Sales attendant	24	25	26	1	2	2	8	3	10
3. Salesperson, general	52	62	69	10	17	5	19	15	35

*Job titles added by employers

Table 14. (continued)

I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
4. Salesperson, dry goods	13	13	13	0	0	1	4	1	4
5. Salesperson, furniture	25	27	29	2	4	3	8	5	12
6. Salesperson, general hardware	7	8	8	1	1	1	2	2	3
7. Salesperson, men's and boys' clothing	5	5	5	0	0	1	2	1	2
8. Salesperson, parts	11	12	13	1	2	1	4	2	6
9. Salesperson, television and appliance	13	13	13	0	0	1	4	1	4
10. Salesman, women's and girls' apparel	15	17	17	2	2	2	5	4	7
11. Salesperson, gift*	10	10	10	0	0	1	3	1	3
Sub-total	485	557	569	72	84	49	169	121	252
C. Not grouped a. Buyers, general wholesale*	12	12	12	0	0	1	4	1	4
Sub-total	12	12	12	0	0	1	4	1	4
Total	1381	1531	1616	150	235	138	463	288	696

Table 15. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971, for service occupations

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
XIV. Service Industry									
A. Conditioned air, commercial									
1. Refrigeration mechanic	33	42	47	9	14	3	13	12	27
2. Air conditioning mechanic, commercial	1	2	2	1	1	0	0	1	1
3. Air conditioning mechanic, domestic	8	9	9	1	1	1	3	2	4
4. Furnace installer and repairman, hot air	2	4	3	2	1	0	2	2	3
Sub-total	44	57	61	13	17	4	18	17	35
B. Electronic service									
1. Television and radio service and repairman	5	6	6	1	1	1	2	2	3
2. Electronics mechanic	7	14	14	7	7	1	4	8	11
3. Electric motor repairman	0	1	1	1	1	0	0	1	1
4. Electrical appliance repairman	8	8	9	0	1	1	2	1	3
5. Instrument repairman	2	3	4	1	2	0	1	1	3
6. Aircraft radio mechanic	10	15	19	5	9	1	5	6	14
Sub-total	32	47	53	15	20	4	14	19	35

Table 15. (continued)

Code: I. Major Occupational Field A. Proposed course to train workers for the job titles listed below 1. Job titles used in the survey	Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
		Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
C. Small machine repair									
1. Office machine serviceman	16	20	22	3	6	2	6	6	12
2. Vending machine repairman	2	4	4	2	2	0	1	2	3
Sub-total	18	24	26	6	8	2	7	8	15
Total	94	128	140	34	45	10	39	44	85

1, 1969 and 85 by January 1, 1971, in the Service Industries. There were expressed demands for the occupational field in the job titles of: Refrigeration Mechanic with 27 needed to be trained by January 1, 1971; Aircraft Radio Mechanic, 14 needed to be trained by January 1, 1971; Office Machine Repairman, 12 needed to be trained by January 1, 1971; and Electronics Mechanic, 11 needed to be trained by January 1, 1971.

The major occupational field of Textiles reported a total of 219 persons needed by January 1, 1971 with 88 needed by January 1, 1969. The information for this occupational field is summarized in Table 16. The job title accounting for almost one-half of these demands was Power Sewing Machine Operator (All-around) which reported a need of 106 people to be trained by January 1, 1971. The second largest enumeration was for the job title of Steam Press Operator, needing 57 trained by January 1, 1971.

Present Number of Employees, Current Job Vacancies as of September 30, 1967, and Formal In-Plant Training and Supply of Trained Workers by Job Titles

In Tables 17-31 employees are analyzed according to the present number of employees and current job vacancies as of September 90, 1967, and also according to the formal in-plant training and supply of trained workers by job titles for each major occupational area. The wide variation in many job titles between number needed and number engaged in in-plant training indicates the need for the training at some other institution.

Table 17 presented the present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for the major occupational area of Agriculture Related Occupations. Nursery worker had the greatest number of current vacancies with 15, while Grader of Agricultural

Table 16. Anticipated employment level and need for trained workers by occupational instructional program and job title January 1, 1969 and January 1, 1971 for textile industries

Code:
I. Major Occupational Field
A. Proposed course to train workers for the job titles listed below
1. Job titles used in the survey

Present number of employees Sept. 30, 1967	Anticipated employment		Increased employment over September 30, 1967, level		Employee turnover estimated at 10%/year		Number needed to be trained by	
	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
XV. Textiles								
A. Power sewing machine operator								
1. Power sewing machine operator, all-around	353	353	353	0	0	35	106	35	106
2. Power sewing machine operator, regular equipment	23	30	40	7	17	2	9	9	26
Sub-total	376	383	393	7	17	37	115	44	132
B. Not grouped								
1. Hand sewing*	3	5	6	2	3	0	2	2	5
2. Tassel machine operator*	3	4	4	1	1	0	1	1	2
3. Master tailor	3	4	5	1	2	0	1	2	3
4. Alteration tailor	4	4	4	0	0	0	1	0	1
5. Pattern cutter fabric*	3	4	4	1	1	0	1	1	2
6. Steam press operator	98	119	119	21	21	10	36	31	57
7. Furniture upholsterer	4	4	4	0	0	0	1	0	1
8. Upholsterer cutter	2	2	3	0	1	0	1	0	2
9. Milliner	1	2	2	1	1	0	1	1	2
10. Dry cleaning machine operator	17	22	22	5	5	2	7	7	12
Sub-total	138	170	173	32	35	12	52	44	87
Total	514	553	566	39	52	49	167	88	219

*Job titles added by employers

Table 17. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for agricultural related occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	adequate %	surplus %
1. Chopping machine operator	0	4	4	0	0	0	0	-	100.00	-
2. Meat grader	12	0	12	0	0	0	0	50.00	50.00	-
3. Grader, agricultural commodities	21	25	46	14	3	5	5	100.00	-	-
4. Dairy processing equipment operator	31	0	31	0	0	0	0	-	100.00	-
5. Laboratory tester	20	0	29	2	1	1	0	50.00	50.00	-
6. Laboratory supervisor	5	0	5	0	0	0	0	-	100.00	-
7. Farm equipment mechanic	33	0	33	3	2	1	1	54.55	45.45	-
8. Farm equipment mechanic helper	8	0	8	1	1	1	0	27.27	72.73	-
9. Farm machinery set-up man	21	0	21	3	1	1	0	50.00	50.00	-
10. Agricultural machinery welder	7	0	7	0	0	0	0	-	100.00	-
11. Agricultural machinery parts man	28	0	28	2	1	0	1	22.22	77.78	-
12. Salesman agricultural machinery	17	0	17	0	0	0	0	33.33	66.67	0
13. Assembly repairman agri. machinery	3	0	3	0	0	0	0	100.00	-	-
14. Seed processing specialist	2	0	2	0	0	0	0	-	100.00	-

Table 17. (continued)

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
15. Agri. feed mix specialist	24	0	24	0	0	0	0	-	100.00	-
16. Feed research aide	1	2	3	0	0	0	0	25.00	75.00	-
17. Sales grain and feed	386	0	386	1	1	1	0	-	100.00	-
18. Poultry technician	3	0	3	0	0	0	0	41.67	58.33	0
19. Salesman-driver	404	0	404	7	0	0	0	-	100.00	-
20. Truck driver, heavy	326	0	326	11	6	3	2	27.57	66.67	4.76
21. Floral designer	4	2	6	0	2	2	0	100.00	-	-
22. Nursery worker	80	50	130	15	1	0	1	100.00	-	-
23. Sprayer	9	0	9	0	0	0	0	40.00	60.00	-
24. Serviceman, liquid fertilizer	9	0	9	2	0	0	0	66.67	33.33	-
25. Salesperson, general hardware	7	0	7	2	0	0	0	25.00	75.00	-
26. Conservation technician	12	0	12	2	0	0	0	100.00	-	-
27. Conservation specialist	5	0	5	1	0	0	0	100.00	-	-
Total	1478	92	1570	66	19	15	10			

Commodities vacancies numbered 14. Truck Driver (Heavy) reported the largest number of trainees with 6. Grader of Agricultural Commodities listed the largest number planned for formal in-plant training with 5 planned by January 1, 1969 and with five planned by January 1, 1971. Job titles which were reported as being in short supply by 40 percent or more of the employers were: Meat Grader; Grader, Agricultural Commodities; Laboratory Tester; Farm Equipment Mechanic; Farm Equipment Mechanic Helper; Assembly Repairman, Agriculture Machinery; Salesman Driver; Floral Designer; Nursery Worker; Serviceman Liquid Fertilizer; Sales, Grain and Feed; Sprayer; Conservation Technician; and Conservation Specialist. The two job classifications having training programs sufficient to fill current vacancies were: Farm Equipment Mechanic Helper with one vacancy and one in training, and Sales, Grain and Feed, with one vacancy and one in training.

Aircraft Mechanic and Maintenance Occupations were reported in Table 18. Only two current vacancies were listed: one Aircraft and Engine Mechanic and one Lineman. Airline Agent listed the largest number planned for formal in-plant training with five planned by January 1, 1969 and eight planned by January 1, 1971. Job titles designated as being in short supply by 40 percent or more of employers reporting were Aircraft and Engine Mechanic, Airplane Inspector, Lineman and Airline Agent. A factor of interest which the employers reported was that only male employees were listed.

Present number of employees, current job vacancies, formal in-plant training, and supply of trained workers by job titles for Automotive and Diesel Occupations are given in Table 19 as of September 30, 1967. Vacan-

Table 18. Present number of employees, current job vacancies as of Sept. 30, 1967, and formal in-plant training and supply of trained workers by job titles for aircraft mechanics and maintenance occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	adequate %	surplus %
1. Aircraft and engine mechanic	56	0	56	1	6	7	0	50.00	50.00	-
2. Airplane inspector	9	0	9	0	4	4	0	50.00	50.00	-
3. Flight test shop mechanic	2	0	2	0	1	1	0	-	100.00	-
4. Aircraft engine tester	2	0	2	0	0	1	0	-	100.00	-
5. Supercharger mechanic	1	0	1	0	0	1	0	-	100.00	-
6. Hydraulic tester	3	0	3	0	1	1	0	-	100.00	-
7. Carburetor man	2	0	2	0	1	1	0	-	100.00	-
8. Lineman	23	0	23	1	4	3	0	50.00	50.00	-
9. Mechanic, flowmeter test and certification	2	0	2	0	0	1	0	-	100.00	-
10. Airline agent	17	0	17	0	0	5	8	100.00	-	-
11. Airport serviceman	1	0	1	0	0	0	0	-	100.00	-
Total	118	0	118	2	17	29	8			

Table 19. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for automotive and diesel occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
1. Automobile mechanic	130	4	134	21	15	11	8	45.45	54.55	-
2. Automotive tune-up mechanic	26	1	27	1	2	2	0	27.27	72.73	-
3. Front end alignment man	6	0	6	1	1	1	0	50.00	50.00	-
4. Transmission mechanic	3	1	4	1	0	0	0	66.67	33.33	-
5. Brakeman, automobile	9	0	9	0	0	0	0	33.33	66.67	-
6. Automobile air conditioning mechanic	3	0	3	0	0	0	0	-	100.00	-
7. Automobile parts man	52	1	53	2	4	2	1	53.33	46.67	-
8. Automobile body repairman	33	1	34	7	4	4	0	61.54	38.46	-
9. Automobile spray painter	12	0	12	0	0	0	0	16.67	83.33	-
10. Automobile service station attendant	103	0	103	4	0	1	0	33.33	58.33	8.34
11. Automobile maintenance mechanic	36	0	36	3	3	3	0	37.50	50.00	12.50
12. Tire repairman	86	0	86	3	0	0	0	38.46	61.54	-
13. Diesel mechanic	30	0	30	1	1	0	1	16.67	83.33	-
14. Auto machinist	4	0	4	0	0	0	0	50.00	50.00	-
15. Gasoline engine repairman (2- and 4-cycle)	1	0	1	0	1	1	0	-	100.00	-
16. Bus driver, commercial	232	0	232	0	6	16	20	-	100.00	-
17. Sales representative, automobile	8	0	8	0	1	1	0	-	100.00	-

Table 19. (continued)

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
18. Tractor-trailer truck driver	351	0	351	14	3	2	4	27.27	63.64	9.09
19. Light truck driver	139	0	139	5	1	2	0	18.75	75.00	6.25
Total	1264	8	1272	63	42	46	34			

cies existed in 12 job titles with the two largest being Automobile Mechanic, 21, and Tractor-Trailer Truck Driver, 14. Six job titles: Automobile Mechanic, Front-End Alignment Man, Transmission Mechanic, Automobile Parts Man, Automobile Body Repairman, and Automotive Machinist, indicated 40 percent or more employers reporting a shortage.

Appearing in Table 20 were data giving present number of employees, and current job vacancies, formal in-plant training, and supply of trained workers by job titles for the Construction Industry as of September 30, 1967. Eleven job titles: Heavy Equipment Operator, Bulldozer Operator, Dragline Operator, Power Shovel Operator, Carpenter Foreman, Roofer, House Repairman, Concreting Foreman, Concrete Paving Machine Operator, Heavy Equipment Mechanic, and Construction Laborer, were considered as in short supply by 40 percent or more of the employers reporting. A total of 126 current vacancies existed in the major occupational area with only 52 current trainees. The highest number of current vacancies were listed in the job titles of Heavy Equipment Operator with 28 current vacancies and two current trainees and Construction Laborer with 23 current vacancies and no trainees. Only seven job titles have training programs sufficient to fill current vacancies: Carpenter Foreman with two vacancies and three in training, Floor Layer with two vacancies and six in training, Roofer with two vacancies and 12 in training, Plumber with two vacancies and five in training, Pipe Fitter with one vacancy and three in training; Lineman with two vacancies and four in training, and Concreting Foreman with one vacancy and one in training.

Data for Food Service Occupations were noted in Table 21. Two of

Table 20. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for construction industries

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	adequate %	surplus %
1. Heavy equipment operator	206	0	206	28	2	0	0	58.89	41.11	-
2. Bulldozer operator	54	0	54	11	0	0	0	66.67	22.22	11.11
3. Dragline operator	29	0	29	4	0	1	2	66.67	33.33	-
4. Power shovel operator	5	0	5	1	0	0	0	100.00	-	-
5. Front loader operator	10	0	10	0	0	0	0	-	100.00	-
6. Scraper operator	21	0	21	0	0	0	0	-	100.00	-
7. Motor grader operator	9	0	9	0	0	0	0	-	100.00	-
8. Carpenter, foreman	103	0	103	2	3	1	6	47.83	52.17	-
9. Carpenter	424	0	424	17	8	5	7	34.29	65.71	-
10. Floor layer	37	1	38	2	6	2	4	25.00	75.00	-
11. Roofer	88	0	88	2	12	6	7	66.67	33.33	-
12. House repairman	88	0	88	2	0	0	0	40.00	60.00	-
13. Plumber	61	0	61	2	5	1	1	30.77	69.23	-
14. Pipe fitter	40	0	40	1	3	0	1	33.33	66.67	-
15. Painter, spray	81	0	81	3	1	1	1	17.65	76.47	5.88
16. Painter, brush	35	0	35	0	0	0	0	-	100.00	-
17. Electrician	62	0	62	3	1	0	1	27.78	72.22	-
18. Lineman (phone and electric)	22	0	22	2	4	2	2	20.00	80.00	-
19. Bricklayer, mason	87	0	87	4	1	2	1	30.77	69.23	-
20. Concreting, foreman	19	0	19	1	1	1	0	42.86	57.14	-
21. Concrete batching and mixing plant foreman	11	0	11	0	0	0	0	-	75.00	25.00
22. Concrete mixer operator	9	0	9	2	0	0	0	-	66.67	33.33

Table 20. (continued)

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
23. Concrete mixing truck operator	201	0	201	2	0	0	0	-	75.00	25.00
24. Concrete paving machine operator	0	0	0	1	0	0	0	100.00	-	-
25. Heavy equipment mechanic	29	0	29	3	0	0	0	62.50	25.00	12.50
26. Const. equipment mechanic	27	0	27	2	1	1	0	25.00	62.50	12.50
27. Plasterer	27	0	27	1	0	0	0	-	100.00	-
28. Laborer, construction	357	0	357	23	0	0	0	50.00	33.33	16.67
29. Structural steel worker	94	0	94	2	0	0	0	20.00	80.00	-
30. Estimator	70	1	71	5	3	5	4	37.50	62.50	-
31. Tile layer	7	0	7	0	0	0	0	-	100.00	-
32. Designer, interior	2	0	2	0	1	1	0	-	100.00	-
	2315	2	2317	126	52	29	37			

Table 21. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for food service occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	adequate %	surplus %
1. Executive chef	17	11	28	0	3	2	0	30.77	69.23	-
2. Chef	34	36	70	0	4	4	0	29.41	70.59	-
3. Cook	141	295	436	19	64	104	141	47.73	52.27	-
4. Cook's helper	42	188	230	9	4	4	4	21.21	78.79	-
5. Baker	26	14	40	1	2	2	1	35.71	64.29	-
6. Baker's helper	3	4	7	0	0	0	0	-	100.00	-
7. Host	13	5	18	0	2	3	0	40.00	60.00	-
8. Hostess	3	39	42	2	0	0	0	20.00	80.00	-
9. Cashier	58	456	514	4	30	82	121	11.76	88.24	-
10. Waiter and waitress	177	677	854	31	69	106	146	39.53	60.47	-
11. Busboy	208	77	285	5	0	0	0	25.00	75.00	-
12. Kitchen helper (washer)	111	175	286	7	4	3	3	25.81	67.74	6.45
13. Bellhop	26	4	30	3	0	0	0	12.50	87.50	-
14. Meat cutter (butcher)	155	29	184	0	6	7	6	33.33	66.67	-
15. Grocery stock clerk	595	53	648	0	30	16	21	15.00	80.00	5.00
16. Produce manager	4	0	4	0	0	0	0	-	100.00	-
Total	1613	2063	3676	81	218	333	443			

the job titles, Cook and Host, were listed by 40 percent or more of the employers as being in short supply. All but the following job titles: Cook's Helper, Hostess, Busboy, Kitchen Helper, and Bellhop, were noted as having sufficient trainees for current vacancies. A total of 81 current vacancies existed in the major occupational area with 218 current trainees. The job title of Waiter and Waitress had the largest number of current trainees and vacancies with 69 and 31 listed, respectively.

Shown in Table 22 were figures for Governmental State and Federal Agencies. The job titles of Mail Carrier reported two current vacancies and Traffic technician one while none of the employers listed trainees. Ninety percent of the employers reported an adequate supply of employees.

Indicated in Table 23 were data showing present number of employees, current job vacancies, and supply of trained workers by job titles for the Governmental State and Local Agencies as of September 30, 1967. A total of 24 current vacancies existed in the major occupational area with 28 current trainees. There were only two job titles that did not have sufficient training programs to fill current vacancies: namely; Equipment Operator, and Nurse (Public and School.) Ten job titles were listed by 40 percent or more of the employers as being in short supply.

Enumeration in Table 24 presented the number of employees, current job vacancies, formal in-plant training, and supply of trained workers by job titles for Health Occupations as of September 30, 1967. Six of the 17 job titles were listed as in short supply by 40 percent of the employers reporting. The job titles of Licensed Practical Nurse, Surgical Technician, and Inhalation Therapist did not have sufficient training programs to meet current vacancies. The job title of Licensed Practical

Table 22. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for governmental state and federal agencies

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
1. Contract specialist	14	2	16	0	0	0	0	-	100.00	-
2. Title clerk	0	2	2	0	0	0	0	-	100.00	-
3. Civil service clerk	0	2	2	0	0	0	0	-	100.00	-
4. Post office clerk	66	10	76	0	0	0	0	7.69	92.31	-
5. Photographer	1	0	1	0	0	0	0	-	100.00	-
6. Traffic technician	1	7	8	1	0	0	0	-	100.00	-
7. Building inspector	3	0	3	0	0	0	0	-	100.00	-
8. Fire inspector	2	0	2	0	0	0	0	-	100.00	-
9. Mail carrier	78	0	78	2	0	0	0	7.69	92.31	-
Total	165	23	188	3	0	0	0			

Table 23. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for governmental state and local agencies

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	adequate %	surplus %
1. Assessor	16	6	22	0	1	1	0	-	100.00	-
2. Building inspector	11	0	11	0	2	6	6	100.00	-	-
3. Purchasing agent	7	0	7	0	0	0	0	-	100.00	-
4. Town clerk	25	16	41	0	0	0	0	13.64	86.36	-
5. Water service dispatcher	5	1	6	0	0	0	0	40.00	60.00	-
6. Typist and clerk-typist	2	3	5	0	0	0	0	-	100.00	-
7. Policeman	171	0	171	2	3	5	15	35.71	64.29	-
8. Policewoman	0	4	4	0	0	0	0	100.00	-	-
9. Deputy sheriff	10	4	14	0	0	0	0	14.29	85.71	-
10. Electric-meter repairman	1	0	1	0	0	0	0	-	100.00	-
11. Street-light serviceman	2	0	2	0	0	0	0	-	100.00	-
12. Water-meter repairman	7	0	7	0	0	0	0	50.00	50.00	-
13. Parking-meter repairman	4	0	4	0	0	0	0	50.00	50.00	-
14. Equipment operator	279	0	279	7	4	9	20	18.75	81.25	-
15. Pump-station operator, waterworks	21	1	22	0	0	0	0	14.29	85.71	-
16. Senior-sewage plant operator	5	0	5	0	0	0	0	50.00	50.00	-
17. Sewage-plant operator	16	0	16	0	0	0	0	33.33	66.67	-
18. Incinerator operator	1	0	1	0	0	0	0	100.00	-	-
19. Custodian	1055	394	1449	8	13	4	3	17.50	80.00	2.50
20. Maintenance man	297	2	299	4	4	6	1	20.00	80.00	-
21. General purpose mechanic	29	1	30	0	0	0	0	46.15	53.85	-
22. Boiler engineer	15	0	15	0	0	0	0	33.33	66.67	-

Table 23. (continued)

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
23. Maintenance supervisor	28	5	33	0	0	0	0	33.33	66.67	-
24. Fireman	76	0	76	0	0	0	0	-	100.00	-
25. Library assistant	1	23	24	0	1	0	0	50.00	50.00	-
26. Nurse, public and school	1	70	71	3	0	0	0	55.56	44.44	-
27. Cook head school cafeteria	2	36	38	0	0	0	0	16.67	83.33	-
Total	2087	566	2653	24	28	31	45			

Table 24. Present number of employees, current job vacancies as of Sept. 30, 1967, and formal in-plant training and supply of trained workers by job titles for health occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	ade-quate %	surplus %
1. Nurse, associate degree of R.N.	6	1196	1202	120	493	292	497	60.00	40.00	-
2. Nurse, licensed practical	1	431	432	102	52	52	165	57.14	42.86	-
3. Orderlies and nurse's aides	186	1230	1416	86	284	134	201	25.00	70.00	5.00
4. Attendants	9	10	19	0	0	0	0	-	100.00	-
5. Medical assistant	30	135	165	0	0	0	0	33.33	66.67	-
6. Medical secretary	0	119	119	4	75	25	50	20.00	80.00	-
7. Medical record librarian	0	17	17	0	0	0	0	22.22	77.78	-
8. Medical record clerk	0	65	65	0	0	0	0	11.11	88.89	-
9. Surgical technician	5	59	64	7	0	0	0	42.86	57.14	0
10. Medical laboratory assistant	16	112	128	3	37	15	22	27.27	72.73	-
11. Dental laboratory technician	3	0	3	1	0	0	0	100.00	-	-
12. Dental assistant	0	8	8	1	0	0	0	66.67	33.33	-
13. X-ray technician, radiologic technologist	13	55	68	0	12	4	18	18.18	81.92	-
14. Occupational therapy aide	1	17	18	1	1	1	0	33.33	66.67	-
15. Inhalation therapist	5	2	7	3	0	0	0	66.67	33.33	-
16. Optician	30	48	78	0	0	0	0	-	100.00	-
17. EKG and EE technician	0	2	2	0	0	0	0	-	100.00	-
Total	305	3506	3811	328	954	523	953			

Nurse had 102 current vacancies and 52 current trainees. Only 305 of the 3,811 employees listed were male.

Information in Table 25 were figures for the Manufacturing and Industrial Occupations. The job titles of Screw Machine Set-up Operator and Light-metal Assembler both reported current vacancies of 20 with the next greatest number of current vacancies being shared by the job titles of Arc Welder and Combination Welder with 16 each. Shortages were reported in all but seven of the 47 job titles. Current vacancies totaled 155 by all employers reporting while current trainees were listed at 69. Seventeen of the 47 job titles suggested some current training.

Table 26 illustrated the present number of employees, current job vacancies, formal in-plant training, and supply of trained workers by job titles for the major occupational area of Office Occupations as of September 30, 1967. Typist and Clerk-Typist were listed as having the greatest number of current vacancies with 39, while General Clerk vacancies numbered 32. The job title of Secretary reported the largest number of trainees with 15, the largest number planned for formal in-plant training with 11 by January 1, 1969 and eight by January 1, 1971. A total of 148 current vacancies existed in the major occupational area with 45 current trainees.

Similar figures for Data Processing Occupations are shown in Table 27. All job titles reported that 21 percent or more employers listed a short supply with 100 percent indicating a shortage of Tape Librarians and 72 percent citing a shortage of Systems Analysts. The job title of Programmer listed the largest number of current vacancies (15 of the 28 total) and of the current trainees (five of the seven listed by all employers). Only three of the eight job titles in this occupational area have some kind of

Table 25. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for manufacturing and industrial occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	adequate %	surplus %
1. Machinist	182	0	182	10	9	5	3	56.52	43.48	-
2. Tool and die maker	64	13	77	3	9	2	0	66.67	33.33	-
3. Inspector, floor	18	45	63	0	0	0	0	50.00	40.00	10.00
4. Inspector, gage	25	0	25	0	0	0	0	25.00	75.00	-
5. Inspector, general	66	7	73	0	1	2	0	25.00	75.00	-
6. Set-up man (job setter)	23	0	23	0	2	2	1	66.67	33.33	-
7. Die setter	34	0	34	0	0	0	0	75.00	25.00	-
8. Heat treater	12	0	12	0	1	0	0	-	80.00	20.00
9. Engine lathe set-up operator	34	1	35	0	0	0	0	50.00	50.00	-
10. Turret lathe set-up operator	8	0	8	0	0	0	0	100.00	-	-
11. Milling machine set-up operator	13	1	14	0	0	0	0	66.67	33.33	-
12. Grinding machine operator	17	0	17	0	0	0	0	25.00	50.00	25.00
13. Screw machine set-up operator	65	81	146	20	0	0	0	100.00	-	-
14. Drill press operator	53	15	68	0	3	1	1	18.18	72.73	9.09
15. Saw and sheer operator	0	0	0	2	0	0	0	-	100.00	-
16. Mixing and packing machine operator	8	0	8	0	0	0	0	-	100.00	-
17. Machine molder	29	18	47	8	4	0	0	75.00	25.00	-
18. Coremaker	23	4	27	0	0	0	0	50.00	50.00	-
19. Maintenance mechanic	141	2	143	8	2	0	1	45.83	54.17	-

Table 25. (continued)

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
20. Stationary engineer	8	0	8	1	0	0	0	33.33	66.67	-
21. Lay-out man, metal	25	0	25	3	0	0	0	16.67	83.33	-
22. Patternmaker, metal	11	0	11	2	3	0	0	33.33	50.00	16.67
23. Sheet metal worker	71	2	73	4	2	0	0	40.00	50.00	10.00
24. Press operator, sheet metal	98	22	120	13	16	2	4	40.00	60.00	-
25. Fabricators	8	0	8	0	0	0	0	100.00	-	-
26. Metal plater	5	8	13	0	0	0	0	-	-	100.00
27. Light metal assembler	11	75	86	20	0	0	0	100.00	-	-
28. Welder, gas	13	0	13	2	1	0	1	33.33	66.67	-
29. Welder, arc	108	2	110	16	2	2	2	42.86	42.86	14.28
30. Welder, combination	94	0	94	16	0	0	0	52.94	47.06	-
31. Welder, heliarc	17	0	17	0	0	0	0	100.00	-	-
32. Metallurgist assistant (technician)	4	0	4	0	0	0	0	-	100.00	-
33. Mechanical engineering technician	29	0	29	3	0	0	0	100.00	-	-
34. Draftsman, mechanical	76	0	76	9	7	1	0	45.83	54.17	-
35. Electrical technician	22	0	22	0	0	0	0	100.00	-	-
36. Electro-mechanical technician	4	0	4	0	0	0	0	100.00	-	-
37. Instrumentation technician	7	0	7	2	0	0	0	100.00	-	-
38. Electronic technician	20	3	23	1	2	2	0	80.00	20.00	-
39. Draftsman, architectural	84	3	87	9	1	1	0	50.00	50.00	-
40. Draftsman, map	12	0	12	0	4	3	3	33.33	66.67	0
41. Draftsman, civil	1	0	1	1	0	0	0	100.00	-	-

Table 25. (continued)

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
42. Draftsman, electrical	17	0	17	2	0	0	0	50.00	50.00	-
43. Draftsman, electronic	7	0	7	0	0	0	0	100.00	-	-
44. Chemical laboratory technician	8	0	8	0	0	0	0	40.00	60.00	-
45. Fork lift truck driver	8	0	8	0	0	0	0	-	100.00	-
46. Heat seal operator	4	0	4	0	0	0	0	100.00	-	-
47. Custom woodworker	40	19	59	0	0	0	0			
Total	1627	321	1948	155	69	23	16			

Table 26. Present number of employees, current job vacancies as of September 30, 1967 and formal in-plant training and supply of trained workers by job titles for office occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	adequate %	surplus %
1. Secretary	27	1148	1175	30	15	11	8	20.48	77.62	1.90
2. Executive secretary	0	16	16	1	0	0	0	25.00	75.00	-
3. Stenographer	11	385	396	3	4	4	0	20.90	76.12	2.98
4. Transcribing machine operator (dictaphone)	2	218	220	12	5	0	1	26.67	73.33	-
5. Typist and clerk-typist	29	1139	1168	39	1	0	1	13.16	82.46	4.38
6. Receptionist	6	128	134	0	0	0	0	11.76	88.24	-
7. Telephone operator (PBX)	5	178	183	0	0	0	0	15.00	85.00	-
8. General clerk	124	1387	1511	32	5	2	2	15.65	80.87	3.48
9. Shipping and receiving clerk	208	130	338	11	2	2	1	19.74	77.63	2.63
10. Stock clerk	152	51	203	1	2	2	1	6.12	93.88	-
11. Duplicating machine operator	14	62	76	1	1	1	0	6.06	90.91	3.03
12. Collator operator	6	17	23	3	2	0	2	50.00	37.50	12.50
13. Encoder operator	6	12	18	0	0	0	0	-	100.00	-
14. Accounting clerk	124	637	761	8	0	0	0	15.00	85.00	-
15. Billing machine operator	13	82	95	1	0	0	0	17.50	80.00	2.50
16. Bookkeeper	96	222	318	2	5	2	2	22.93	75.16	1.91
17. Bookkeeping machine operator	8	141	149	1	2	1	1	18.33	78.33	3.34
18. Calculating machine operator	10	76	86	1	0	0	0	15.00	85.00	-
19. Statistical clerks and compilers	28	116	144	3	0	0	0	12.00	88.00	-

Table 26. (continued)

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	ade-quate %	surplus %
20. Underwriter	16	2	18	0	0	0	0	75.00	25.00	-
21. Tellers, bank	23	34	57	0	1	1	0	-	100.00	-
22. Proofreaders	0	9	9	0	0	0	0	100.00	-	-
23. Salesman, general	7	0	7	0	0	0	0	-	100.00	-
Total	914	6190	7104	148	45	26	19			

Table 27. Present number of employees, current job vacancies as of Sept. 30, 1967, and formal in-plant training and supply of trained workers by job titles for data processing occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	ade-quate %	surplus %
1. Digital computer operator	100	24	124	0	1	1	0	33.33	66.67	-
2. Programmer	177	25	202	15	5	6	7	61.11	38.89	-
3. Systems analyst	73	2	75	7	0	0	0	72.73	27.27	-
4. Supervisor, machine room	18	8	26	0	0	0	0	61.54	38.26	-
5. Keypunch operator	3	326	329	6	1	1	2	28.00	72.00	-
6. Tabulating machine	12	29	41	0	0	0	0	21.43	78.57	-
7. Data processing maintenance serviceman	2	2	4	0	0	0	0	33.33	66.67	-
8. Tape librarian	1	0	1	0	0	0	0			
Total	386	416	802	28	7	8	9			

training program but none have a number approaching the need anticipated. Almost 50 percent of the workers reported were male.

Printing, Publishing, and Allied Industries' figures were illustrated in Table 28. Shortages were indicated by 40 percent or more of the employers in 18 of the 24 job titles. Off-set Pressman listed the largest number of reported vacancies with six. This job title had 11 current trainees, with three more planned for 1969 and four for 1971. A total of 18 current vacancies existed in the major occupational area with 42 current trainees. About one-sixth of the total employees listed were female.

As found in Table 29, 11 of the 22 job titles for Sales Occupations were indicated as being in short supply by 40 percent or more of the employers returning questionnaires. Only six job titles were cited for having no shortages. General Salesman listed 13 current vacancies and a training program with only eight current trainees. Sales representative showed a similar situation with 12 current vacancies and only 11 current trainees. Only the General Salesperson job title had a training program of size significantly greater than current need with one current vacancy and six current trainees. Only one employer reported a surplus in the job titles of Sales Representative, General Salesman, and Sales Clerk. Thirteen of the 22 job titles listed no training program.

Information found in Table 30 indicated the present number of employees, current job vacancies, formal in-plant training and supply of trained workers by job titles for the Service Industry as of September 30, 1967. The figures indicated that no job title had a surplus of trained personnel. Two job titles, Domestic Air Conditioning Mechanic, and Furnace

Table 28. Present number of employees, current job vacancies as of Sept. 30, 1967, and formal in-plant training and supply of trained workers by job titles for printing, publishing and allied industries

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	ade-quate %	surplus %
1. Foreman, printing shop	69	2	71	0	1	1	0	40.00	60.00	-
2. Off-set pressman	54	1	55	6	11	3	4	66.67	33.33	-
3. Silk screen printer	1	2	3	0	0	0	0	-	100.00	-
4. Job printer	26	4	30	1	0	0	0	66.67	33.33	-
5. Photoengraver	16	0	16	0	0	0	0	100.00	-	-
6. Photographer (litho)	24	4	28	2	2	0	0	54.55	45.45	-
7. Photographer (news)	15	0	15	0	0	0	0	33.33	66.67	-
8. Multilith operator	19	8	27	0	0	0	0	54.55	45.45	-
9. Folding machine operator	12	12	24	0	2	2	0	50.00	50.00	-
10. Commercial artist (illustrator)	20	6	26	0	0	0	0	66.67	33.33	-
11. Platen and letter pressman	36	14	50	1	1	1	0	33.33	66.67	-
12. Linotype operator	89	15	104	4	6	3	0	70.00	30.00	-
13. Compositor (typographer)	148	21	169	3	5	3	1	56.25	37.50	7.25
14. Bookbinder	9	28	37	0	1	1	0	42.86	57.14	-
15. Linotype machinist	14	0	14	0	0	0	0	66.67	33.33	-
16. Bindery small machine	1	11	12	0	3	2	0	75.00	25.00	-
17. Ink matcher	1	1	2	0	0	0	0	-	100.00	-
18. Camerman, radio and TV	6	0	6	0	0	0	0	100.00	-	-
19. Platemaker (caster)	28	0	28	1	2	1	1	100.00	-	-
20. Cutter operator	21	5	26	0	1	1	0	45.45	54.55	-
21. Web pressman	51	0	51	0	6	2	2	100.00	-	-
22. Cylinder pressman	3	0	3	0	1	0	1	100.00	-	-
23. Machinist press sterotype	4	0	4	0	0	0	0	-	100.00	-
24. Sales representative	2	0	2	0	0	0	0	-	100.00	-
Total	669	134	803	18	42	20	9			

Table 29. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for sales occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
1. Sales representative	328	11	339	12	11	10	9	30.56	66.67	2.77
2. Salesman, general	171	12	183	13	8	6	6	45.45	50.00	4.55
3. Salesman, footwear	8	2	10	0	2	1	1	100.00	-	-
4. Salesman, gas or electric appliances	2	0	2	0	0	0	0	100.00	-	-
5. Salesman, hardware supplies	15	1	16	1	1	1	0	100.00	-	-
6. Salesman, men's and boys' clothing	11	0	11	0	0	0	0	100.00	-	-
7. Salesman, radio and television parts	8	0	8	0	0	0	0	100.00	-	-
8. Salesman, women's and girls' apparel	0	293	293	0	0	0	0	50.00	50.00	-
9. Salesman, advertising	4	9	13	0	0	0	0	-	100.00	-
10. Salesman, radio and television time	9	0	9	0	0	0	0	-	100.00	-
11. Sales clerk	246	75	321	2	4	0	0	9.52	85.71	4.77
12. Sales attendant	19	5	24	1	1	1	0	25.00	75.00	-
13. Salesperson, general	26	26	52	1	6	4	2	38.46	61.34	-
14. Salesperson, dry goods	1	12	13	0	0	0	0	100.00	-	-
15. Salesperson, furniture	17	8	25	0	4	4	4	33.33	66.67	-
16. Salesperson, general hardware	2	5	7	0	0	1	1	50.00	50.00	-
17. Salesperson, men's and boys' clothing	2	3	5	0	0	0	0	100.00	-	-
18. Salesperson, parts	10	1	11	1	1	0	0	66.67	33.33	-

Table 29. (continued)

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by: Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers: short %	adequate %	surplus %
19. Salesperson, television and appliance	2	0	2	0	0	0	0	-	100.00	-
20. Salesperson, women's and girls' apparel	0	15	15	1	0	0	0	-	100.00	-
21. Salesperson, gifts	0	10	10	0	0	0	0	-	100.00	-
22. Buyers, general and wholesale	3	9	12	0	0	0	0	-	100.00	-
Total	884	497	1381	32	38	28	22			

Table 30. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for service occupations

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	adequate %	surplus %
1. Refrigeration mechanic	33	0	33	1	0	0	0	40.00	60.00	-
2. Air conditioning mechanic, commercial	1	0	1	1	0	0	0	100.00	-	-
3. Air conditioning mechanic, domestic	8	0	8	0	0	0	0	-	100.00	-
4. Furnace installer and repairman, hot air	2	0	2	1	0	0	0	-	100.00	-
5. Television and radio service and repairman	5	0	5	0	0	0	0	40.00	60.00	-
6. Electronics mechanic	7	0	7	7	1	1	0	66.67	33.33	-
7. Electric motor repairman	0	0	0	1	0	0	0	100.00	-	-
8. Electrical appliance repairman	8	0	8	0	0	0	0	50.00	50.00	-
9. Instrument repairman	2	0	2	1	1	1	0	100.00	-	-
10. Aircraft radio mechanic	10	0	10	1	2	2	0	66.67	33.33	-
11. Office machine	16	0	16	2	1	1	0	50.00	50.00	-
12. Vending machine repairman	2	0	2	1	0	0	0	100.00	-	-
Total	94	0	94	16	5	5	0			

Installer and Hot Air Repairman, were stated by 100 percent of the employers to be in adequate supply. All other job titles were listed in short supply by at least 40 percent of the employers; however, the smallness of the sample can be observed. Seven vacancies were noted in the job title of Electronics Mechanic, with one in current training. A total of 16 current vacancies existed in the major occupational area, with five in current training. Two-thirds of the job titles reported no current training program and all indicated no training program for 1971.

Data in Table 31 indicated frequency counts for the Textiles Industry. Twenty-five vacancies were reported for Power Sewing Machine Operator (All-around) with 50 current trainees. The next largest number of vacancies was listed for Steam Press Operator as 21 with 10 current trainees. Three-fourths of the job titles were shown by the employers as having no current training program and all indicated no training program for 1971. Adequate employees were indicated by 60 percent or more of the employers responding. All but 30 of the 514 employees listed were women.

Employment Level in Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII

Numbers and percent of questionnaires by occupational field in the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska are given in Table 32. The rest of the Merged Area XIII located in the seven counties of Cass, Fremont, Harrison, Page, Pottawattamie, Mills, and Shelby counties are given in Table 33. The two geographic regions were selected for the following reasons:

Table 31. Present number of employees, current job vacancies as of September 30, 1967, and formal in-plant training and supply of trained workers by job titles for textile industries

Job title	Present number of employees male	female	total	Current vacancies Sept. 30, 1967	Formal in-plant training number completing training by Current trainees Sept. 30, 1967	Jan. 1 1969	Jan. 1 1971	Supply of trained workers short %	adequate %	surplus %
1. Power sewing machine operator, all-around	0	353	353	25	50	0	0	33.33	66.67	-
2. Power sewing machine operator, regular equipment	0	23	23	1	0	0	0	33.33	66.67	-
3. Hand sewing	0	3	3	1	0	0	0	-	100.00	-
4. Tassel machine operator	0	3	3	0	0	0	0	-	100.00	-
5. Master tailor	0	3	3	0	0	0	0	-	100.00	-
6. Alteration tailor	0	4	4	0	0	0	0	33.33	66.67	-
7. Pattern cutter fabric	0	3	3	0	0	0	0	-	100.00	-
8. Steam press operator	13	85	98	21	10	10	0	20.00	60.00	20.00
9. Furniture upholsterer	4	0	4	0	0	0	0	-	100.00	-
10. Upholsterer cutter	2	0	2	0	1	1	0	-	100.00	-
11. Milliner	0	1	1	0	0	0	0	-	100.00	-
12. Dry cleaning machine operator	11	6	17	5	0	0	0	20.00	60.00	20.00
Total	30	484	514	53	61	11	0			

Table 32. Number and percent of questionnaires received by occupational field in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska

Occupational questionnaire	Number of questionnaires sent	Questionnaires returned, useable		Mail, returned, not applicable, letter replies and discontinued businesses		Total questionnaires returned	
		number	percent	number	percent	number	percent
Agricultural Related	82	27	32.93	5	6.09	32	39.02
Aircraft Mechanics and Maintenance	8	4	50.00	0	0.00	4	50.00
Automotive and Diesel	131	31	23.66	7	53.43	38	29.01
Construction	168	49	29.17	9	5.35	58	34.52
Food Service	227	44	19.38	12	5.29	56	24.67
Governmental State and Federal	22	8	36.36	3	13.64	11	50.00
Governmental State and Local	27	15	55.56	2	7.41	17	62.96
Health	48	23	47.92	2	4.17	25	52.08
Manufacturing and Industrial	92	38	41.30	6	6.52	44	47.83
Office and Data Processing	157	60	38.22	13	8.28	73	46.50
Printing and Publishing	46	22	47.83	5	10.87	27	58.70
Sales and Service	279	71	25.45	15	5.37	86	30.82
Textile	30	7	23.33	2	6.66	9	30.00
Total	1317	399	30.30	81	6.15	480	36.45

Table 33. Number and percent of questionnaires received by occupational field in Cass, Fremont, Harrison, Page, Pottawattamie, Mills, and Shelby counties, excluding Council Bluffs, Iowa

Occupational questionnaire	Number of questionnaires sent	Questionnaires returned, useable		Mail, returned, not applicable, letter replies and discontinued businesses		Total questionnaires returned	
		number	percent	number	percent	number	percent
Agricultural Related	144	44	30.556	3	6.818	47	32.638
Aircraft Mechanics and Maintenance	9	2	22.222	2	22.222	4	44.444
Automotive and Diesel	94	30	31.915	3	3.191	33	35.106
Construction	118	41	34.746	5	4.237	46	38.983
Food Service	145	35	24.138	6	4.138	41	28.276
Governmental State and Federal	31	24	77.420	1	3.326	25	80.645
Governmental State and Local	131	78	59.542	10	7.634	88	67.176
Health	37	13	35.135	0	0.000	13	35.135
Manufacturing and Industrial	11	3	27.273	0	0.000	3	27.273
Office and Data Processing	69	42	60.870	2	2.899	44	63.768
Printing and Publishing	19	10	52.632	1	5.263	11	57.895
Sales and Service	111	31	27.928	8	7.207	39	35.135
Textile	6	3	50.000	0	0.000	3	50.000
Total	925	356	38.486	41	4.432	397	42.919

1. The communities of Council Bluffs, Iowa, and Omaha, Nebraska, function compatibly as one metropolitan area and are, therefore, difficult to separate.
2. The remainder of Merged Area XIII forms a semicircle around the above-mentioned metropolitan hub.
3. The remainder of Merged Area XIII is rural with all communities under 10,000 and with the primary emphasis on agriculture or related activities.

Although the portion of Merged Area XIII outside the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska employ less than half of the total workers in firms and businesses employing four or more, and, would therefore, have less to gain from the training programs contemplated by Iowa Western Community College District Area XIII, their return percentages were considerably better in eight of the 13 categories when compared to those returned from the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska. For example, 31 questionnaires were sent to employers in State and Federal Agencies outside the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska and 80.65 percent were returned. These figures are compared to 22 sent and 50 percent returned from the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska. Similar results were realized in State and Local Governmental Agencies with 67.18 percent returned from the seven Iowa counties (excluding Council Bluffs), and 62.96 percent returned from the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska. In Office and Data Processing Occupations 63.77 percent were returned from the seven Iowa counties (excluding Council Bluffs) and Omaha, Nebraska. In Textiles

50.00 percent were returned from the seven Iowa counties (excluding Council Bluffs) and 30.00 percent for the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska; in Construction 38.98 percent were returned from the seven Iowa counties (excluding Council Bluffs) and 34.52 percent from the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska. In Sales and Service 35.14 percent were returned from the seven Iowa counties (excluding Council Bluffs) and 30.82 percent for the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska; in Automotive and Diesel 35.11 percent were returned from the seven Iowa counties (excluding Council Bluffs) and 29.01 percent for the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska; and in Food Service 28.28 percent were returned from the seven Iowa counties (excluding Council Bluffs) and 24.67 percent for the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska. Total number of questionnaires sent were 1,317 with 36.45 percent returned from the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska, and 925 sent and 42.92 percent returned from the rest of Merged Area XIII. It would appear that there is little difference between the high interest shown by both areas although there is a slightly greater degree for the Merged Area XIII outside the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska.

Tables 34 to 48 illustrate the employment level in Council Bluffs, Iowa and Omaha, Nebraska versus the seven Iowa counties in the Iowa Western Community College District Area XIII by major occupational areas. Large frequencies in the "number needed to be trained by 1971" in the Seven Iowa Counties column may indicate a need for off-campus classes and/or attendance centers.

As indicated in Table 34, a total of 96 newly trained people were needed by January 1, 1969 in Agricultural Related Occupations in Council Bluffs, Iowa and Omaha, Nebraska with 240 needed by January 1, 1971. Two hundred thirteen were needed in the seven Iowa counties by January 1, 1969 and 517 by January 1, 1971. The seven Iowa counties had about four times as many current vacancies as Council Bluffs, Iowa and Omaha, Nebraska. The seven Iowa counties showed twice as many current trainees as did Council Bluffs, Iowa and Omaha, Nebraska. The largest number to be trained for any job title by 1971 was Heavy Truck Driver with 89 and Salesman Driver with 69 for Council Bluffs, Iowa and Omaha, Nebraska. In the seven Iowa counties, the largest number needed by 1971 were Grain and Feed Sales with 188, Salesman Driver with 67, and Heavy Truck Driver with 66.

Table 35 reported employment level comparisons for Aircraft Mechanic and Maintenance Occupations. There were four trained persons outside of the Council Bluffs, Iowa and Omaha, Nebraska area, and only one vacancy. The anticipated employment will increase from 114 to 203 by 1971 in the Council Bluffs, Iowa, and Omaha, Nebraska area and from 4 to 13 by 1971 in the seven Iowa counties. The number to be trained by 1971 was 136 in Council Bluffs, Iowa and Omaha, Nebraska and 13 in the seven Iowa counties. The largest training demand for any single job title by 1971 was Aircraft and Engine Mechanic with 52 needed in Council Bluffs, Iowa and Omaha, Nebraska, and it was Lineman with four needed in the seven Iowa counties.

Enumeration in Table 36 presents the employment level in Council Bluffs, Iowa and Omaha, Nebraska as compared to the seven Iowa counties

Table 34. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for agriculture related occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Chopping machine operator	4	0	0	0	4	4	0	0	0	1	0	0
2. Meat grader	12	0	0	0	14	17	0	0	3	9	0	0
3. Grader, agri. commodities	0	46	0	14	0	0	60	65	0	0	19	37
4. Dairy processing equipment operator	25	6	0	0	26	25	9	9	4	8	4	6
5. Laboratory tester	26	3	2	0	28	29	3	3	5	11	0	1
6. Laboratory supervisor	4	1	0	0	4	5	1	1	0	2	0	0
7. Farm equipment mechanic	2	28	0	3	2	2	34	35	0	1	9	17
8. Farm equipment mechanic helper	1	7	0	1	1	1	8	8	0	0	2	3
9. Farm machinery set-up man	2	19	0	3	2	2	25	26	0	1	8	15
10. Agricultural machinery welder	0	7	0	0	0	0	7	7	0	0	1	2
11. Agricultural machinery parts man	17	11	0	2	17	19	14	14	1	7	4	7
12. Salesman agri. machinery	1	16	0	0	1	1	18	18	0	0	4	7
13. Assembly repairman agri. machinery	0	3	0	0	0	0	4	4	0	0	1	2

Table 34. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
					Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
14. Seed processing specialist	0	2	0	0	0	0	2	2	0	0	0	2
15. Agri. feed mix specialist	7	17	0	0	7	7	17	18	1	2	2	1
16. Feed research aide	2	1	0	0	2	2	1	2	0	1	0	6
17. Sales grain and feed	37	349	0	1	38	39	381	433	5	13	67	188
18. Poultry technician	0	3	0	0	0	0	3	4	0	0	0	2
19. Salesman-driver	194	210	6	1	201	203	212	213	26	69	23	67
20. Truck driver heavy	207	119	3	8	224	229	135	144	38	89	28	66
21. Floral designer	6	0	0	0	8	10	0	0	3	6	0	0
22. Nursery worker	0	130	0	15	0	0	145	150	0	0	28	64
23. Sprayer	1	8	0	0	3	5	9	9	2	5	2	4
24. Serviceman, liquid fertilizer	2	7	0	2	4	5	10	10	2	4	4	6
25. Salesperson, general hardware	0	7	0	2	0	0	12	13	0	0	6	10
26. Conservation technician	4	8	2	0	7	9	8	11	3	7	1	5
27. Conservation specialist	5	0	1	0	7	7	0	0	3	4	0	5
Total	559	1008	14	52	600	621	1118	1199	96	240	213	517

Table 35. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for aircraft mechanics and maintenance occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Aircraft and engine mechanic	54	2	1	0	70	85	3	4	21	52	1	3
2. Airplane inspector	8	1	0	0	18	21	2	3	11	18	1	3
3. Flight test shop mechanic	2	0	0	0	2	3	0	1	0	2	0	1
4. Aircraft engine tester	2	0	0	0	4	7	0	0	2	5	0	0
5. Supercharger mechanic	1	0	0	0	3	3	0	0	2	3	0	0
6. Hydraulic tester	3	0	0	0	3	4	0	0	0	2	0	0
7. Carburetor man	2	0	0	0	4	5	0	0	2	4	0	0
8. Line man	23	0	0	1	29	32	3	3	8	18	3	4
9. Mechanic flowmeter test and certification	2	0		0	4	13	0	0	2	12	0	0
10. Airline agent	17	0	0	0	22	30	0	0	7	20	0	0
11. Airport serviceman	0	1	0	0	0	0	2	2	0	0	1	2
Total	114	4		1	159	203	10	13	55	136	6	13

Table 36. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for automotive and diesel occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Automobile mechanic	93	41	11	10	117	132	53	55	33	74	16	30
2. Automotive tune-up mechanic	21	6	1	0	23	27	9	9	4	13	4	6
3. Front end alignment man	5	1	0	1	6	9	3	4	2	6	2	4
4. Transmission mechanic	2	2	1	0	3	3	2	2	1	2	0	1
5. Brakeman, automobile	5	4	0	0	7	8	4	4	3	5	0	1
6. Automobile air conditioning mechanic	2	1	0	0	2	3	2	2	0	2	1	1
7. Automobile parts man	31	22	1	1	36	41	25	25	8	21	5	10
8. Automobile body repairman	25	9	5	2	33	35	12	13	11	20	4	8
9. Automobile spray painter	9	3	0	0	9	10	4	4	1	4	1	2
10. Automobile service station attendant	65	38	0	4	69	73	49	53	11	29	15	29
11. Automobile maintenance mechanic	29	7	3	0	35	39	10	11	9	21	4	7
12. Tire repairman	73	13	1	2	81	90	17	21	15	41	5	13
13. Diesel mechanic	25	8	0	1	29	29	9	11	7	23	2	5
14. Auto. machinist	3	1	0	0	3	3	1	1	0	1	0	0

Table 36. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
15. Gasoline engine repairman (2- and 4-cycle)	1	0	0	0	2	2	0	0	1	2	0	0
16. Bus driver, commercial	232	0	0	0	232	232	0	0	23	67	0	0
17. Sales representative automobile	8	0	0	0	8	8	0	0	1	2	0	0
18. Tractor-trailer truck driver	324	27	13	1	385	541	28	29	93	333	4	10
19. Light truck driver	116	23	2	3	134	138	27	28	30	62	6	13
Total	1069	206	38	25	1214	1433	255	272	253	731	69	140

for Automotive and Diesel Occupations. Even though the current number employed in the seven Iowa counties represents only about 20 percent of the employment in Council Bluffs, Iowa and Omaha, Nebraska, the number of current vacancies represents 60 percent as much as those needed in the Council Bluffs, Iowa and Omaha, Nebraska area. The two top job titles demanding training by 1971 were Tractor-Trailer Truck Driver with 333 and Automotive Mechanic with 74 for Council Bluffs, Iowa and Omaha, Nebraska and Automotive Mechanic with 30 and Automobile Service Station Attendant with 29 for the seven Iowa counties.

Analysis of Table 37 for the Construction Industry presented the information that there are over four times as many employees in the Council Bluffs, Iowa and Omaha, Nebraska area as there are in the seven Iowa counties, but the data reversed on current vacancies with over twice as many found in the seven Iowa counties. The training needed in the seven Iowa counties by 1971 exceeded or remained the same as that for Council Bluffs, Iowa and Omaha, Nebraska area for the job titles Heavy Equipment Operator, Bulldozer Operator, Power Shovel Operator, Spray Painter, Lineman (Phone and Electric), and Concrete Paving Machine Operator. The Council Bluffs, Iowa and Omaha, Nebraska training demand for 1971 was 1,061 while that for the seven Iowa counties was 296.

Comparisons for the Food Service Occupations can be noted in Table 38. There were 60 current vacancies in Council Bluffs, Iowa and Omaha, Nebraska and only 21 in the seven Iowa counties. A total of 1,617 trained people were needed in Food Service Occupations in Council Bluffs, Iowa and Omaha, Nebraska by 1971 and 140 in the seven Iowa counties. The job title of Waiter and Waitress had the largest training demand for both areas by

Table 37. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for construction industries

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Heavy equipment operator	137	69	1	27	141	149	98	100	18	54	36	61
2. Bulldozer operator	28	26	1	10	30	34	36	36	5	15	13	21
3. Dragline operator	17	12	1	3	20	23	15	16	5	12	4	10
4. Power shovel operator	1	4	0	1	1	1	5	6	0	0	1	4
5. Front loader operator	10	0	0	0	12	14	0	0	3	8	0	0
6. Scraper operator	21	0	0	0	25	29	0	0	6	16	0	0
7. Motor grader operator	9	0	0	0	11	13	0	0	3	7	0	0
8. Carpenter, foreman	93	10	1	1	101	117	12	12	17	54	3	6
9. Carpenter	400	24	12	5	443	499	33	34	83	232	11	20
10. Floor layer	36	2	2	0	38	41	2	2	6	16	0	1
11. Roofer	74	14	2	0	87	104	12	17	20	56	0	7
12. House repairman	84	4	1	1	94	98	6	6	18	42	2	4
13. Plumber	54	7	2	0	61	62	7	8	12	26	1	3
14. Pipe fitter	38	1	0	0	46	46	3	4	12	22	1	3
15. Painter, spray	78	3	2	1	61	58	4	4	0	0	1	2
16. Painter, brush	34	1	0	0	26	40	1	1	5	17	0	0
17. Electrician	56	6	3	0	74	83	8	8	24	49	3	5
18. Lineman (phone and electric)	0	22	0	2	0	0	25	28	0	0	5	14

Table 37. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
19. Bricklayer, mason	85	2	3	1	94	109	3	3	18	52	1	2
20. Concreting, foreman	15	4	0	1	17	17	5	7	4	7	1	5
21. Concrete batching and mixing plant foreman	9	2	0	0	10	11	2	2	2	5	0	1
22. Concrete mixer operator	8	1	0	2	9	10	3	3	2	5	2	3
23. Concrete mixing truck operator	142	59	0	2	142	142	61	61	14	43	8	20
24. Concrete paving machine operator	0	0	0	1	0	0	1	1	0	0	1	1
25. Heavy equipment mechanic	19	10	0	3	20	22	13	13	3	9	4	7
26. Const. equipment mechanic	18	9	0	2	21	24	12	12	5	12	4	7
27. Plasterer	27	0	1	0	28	28	0	0	4	9	0	1
28. Laborer, construction	239	118	4	19	274	334	138	146	59	177	32	70
29. Structural steel worker	83	11	2	0	85	91	15	15	10	34	5	8
30. Estimator	57	14	2	3	88	100	18	19	37	69	5	11
31. Tile layer	7	0	0	0	8	15	0	0	2	10	0	0
32. Designer, interior	2	0	0	0	3	4	0	0	1	3	0	0
Total	1881	436	40	86	2080	2318	538	564	398	1061	144	296

Table 38. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for food service occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Executive chef	27	1	0	0	31	32	1	1	7	14	0	1
2. Chef	67	3	0	0	71	74	3	3	11	28	0	2
3. Cook	367	69	14	5	431	478	74	74	101	240	12	28
4. Cook's helper	203	27	2	7	216	224	34	34	33	86	10	17
5. Baker	39	1	1	0	42	44	1	1	7	18	0	0
6. Baker's helper	5	2	0	0	5	5	2	2	1	2	0	0
7. Host	18	0	0	0	18	18	0	0	2	5	0	0
8. Hostess	39	3	2	0	44	44	3	3	9	18	0	1
9. Cashier	479	35	3	1	540	567	36	36	109	250	5	12
10. Waiter and waitress	732	122	25	6	837	867	131	133	178	386	21	50
11. Busboy	276	9	5	0	284	288	9	9	36	97	1	3
12. Kitchen helper (washer)	269	17	5	2	286	291	19	19	44	108	4	8
13. Bellhop	30	0	3	0	31	32	0	0	4	11	0	0
14. Meat cutter	162	22	0	0	167	175	22	23	21	63	2	8
15. Grocery stock clerk	616	32	0	0	652	710	34	34	98	290	5	10
16. Produce manager	4	0	0	0	4	4	0	0	0	1	0	0
Total	3333	343	60	21	3659	3853	369	372	661	1617	60	140

1971 with 386 needed in Council Bluffs, Iowa and Omaha, Nebraska and with 50 needed in the seven Iowa counties. The current employees in the Council Bluffs, Iowa and Omaha, Nebraska were ten times the number in the seven Iowa counties while the number of current vacancies in the Council Bluffs, Iowa and Omaha, Nebraska area was only three times larger than in the seven county area.

Inspection of Table 39 revealed the comparisons for Governmental State and Federal Agencies. From the data reported there were few vacancies, little anticipated employment increase, and a small difference in the number needed to be trained by 1971 in both areas.

Table 40 showed employment level comparisons for Governmental State and Local agencies. Current vacancies occurred in only three job titles in Council Bluffs, Iowa and Omaha, Nebraska and in only five job titles in the seven Iowa counties. No job title reported a number needed to be trained by 1971 greater than the 54 listed under Equipment Operator in the seven Iowa counties. In Council Bluffs, Iowa and Omaha, Nebraska the largest number was indicated as 653 for Custodian by 1971. A total of 953 trained people were needed in Council Bluffs, Iowa and Omaha, Nebraska by 1971 and 291 in the seven Iowa counties.

In Table 41 the employment level for the two divisions is compared for Health Occupations with Council Bluffs, Iowa and Omaha, Nebraska which reported about ten times as many current vacancies as the seven Iowa counties. A total of 297 vacancies existed in Council Bluffs, Iowa and Omaha, Nebraska at the time of the survey compared to 31 in the seven Iowa counties. The training comparison showed a very large demand for the job title of Orderlies and Nurses' Aides with 85 needed by 1971

Table 39. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for governmental state and federal agencies

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Contract specialist	16	0	0	0	16	18	0	0	2	7	0	0
2. Title clerk	0	2	0	0	0	0	2	2	0	0	0	1
3. Civil service clerk	2	0	0	0	2	2	0	0	0	1	0	0
4. Post office clerk	0	76	0	0	0	0	76	78	0	0	8	25
5. Photographer	1	0	0	0	1	1	0	0	0	0	0	0
6. Traffic technician	8	0	1	0	10	12	0	0	3	7	0	0
7. Building inspector	3	0	0	0	4	4	0	0	1	2	0	0
8. Fire inspector	2	0	0	0	2	2	0	0	0	1	0	0
9. Mail carrier	0	78	0	2	0	0	81	80	0	0	11	26
Total	32	156	1	2	35	39	159	160	6	18	19	52

Table 40. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for governmental state and local agencies

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan.1 1971
1. Assessor	0	22	0	0	0	0	22	22	0	0	15	7
2. Building inspector	8	3	0	0	14	14	3	4	7	10	2	2
3. Purchasing agent	4	3	0	0	4	4	3	3	0	1	0	1
4. Town clerk	1	40	0	0	1	1	40	41	0	0	0	13
5. Water service dispatcher	0	6	0	0	0	0	7	7	0	0	2	3
6. Typist and clerk-typist	0	5	0	0	0	0	5	9	0	0	1	6
7. Policeman	97	74	0	2	99	103	82	100	12	36	15	50
8. Policewoman	4	0	0	0	4	4	0	1	0	1	0	1
9. Deputy sheriff	0	14	0	0	0	0	14	14	0	0	1	4
10. Electric-meter repairman	0	1	0	0	0	0	1	1	0	0	0	0
11. Street-light serviceman	0	2	0	0	0	0	2	2	0	0	0	1
12. Water-meter repairman	0	7	0	0	0	0	7	7	0	0	1	2
13. Parking-meter serviceman	2	2	0	0	2	2	2	2	0	1	0	1
14. Equipment operator	134	145	5	2	142	157	145	156	21	66	15	54
15. Pump-station operator, water-works	0	22	0	0	0	0	24	24	0	0	4	9

Table 40. (continued)

Job title	Present number of employees Sept. 30, 1967				Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
16. Senior-sewage plant operator	2	3	0	0	2	2	5	5	0	1	2	4
17. Sewage-plant operator	7	9	0	0	7	7	10	11	1	2	2	5
18. Incinerator operator	0	1	0	0	0	0	1	0	0	0	0	0
19. Custodian	1354	95	7	1	1497	1158	100	105	278	653	15	40
20. Maintenance man	228	71	2	2	240	252	75	76	35	96	11	28
21. General purpose mechanic	15	15	0	0	16	16	17	16	3	6	3	7
22. Boiler engineer	15	0	0	0	15	15	0	0	2	5	0	0
23. Maintenance supervisor	33	0	0	0	43	54	0	0	13	34	0	0
24. Fireman	76	0	0	0	78	80	0	0	10	27	0	0
25. Library assistant	13	11	0	0	14	15	15	17	2	6	5	11
26. Nurse, public and school	8	0	0	0	8	8	0	0	1	2	0	34
27. Cook head, school cafeteria	17	21	0	0	18	18	22	22	3	6	3	8
Total	2018	572	14	7	2204	2310	601	647	388	953	97	291

Table 41. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for health occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Nurse, associate degree or R.N.	1189	13	110	10	1396	1641	27	30	326	871	15	25
2. Nurse, licensed practical	402	30	90	12	498	600	44	46	136	347	17	30
3. Orderlies and nurse's aides	1271	145	79	7	1443	1643	164	181	299	805	34	85
4. Attendants	19	0	0	0	25	32	0	0	8	21	0	0
5. Medical assistant	165	0	0	0	205	215	0	0	57	112	0	0
6. Medical secretary	115	4	4	0	166	219	4	4	63	154	0	1
7. Medical record librarian	15	2	0	0	17	19	2	2	4	9	0	1
8. Medical record clerk	63	2	0	0	69	80	2	2	12	38	0	0
9. Surgical technician	61	3	6	1	101	135	5	5	46	104	2	4
10. Medical laboratory assistant	123	5	3	0	146	183	5	5	35	104	1	1
11. Dental laboratory technician	3	0	1	0	5	9	0	0	2	8	0	0
12. Dental assistant	6	2	1	0	7	8	2	2	2	4	0	1
13. X-ray technician radio-logic technologist	64	4	0	0	70	83	4	5	12	40	0	2

Table 41. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
14. Occupational therapy aide	18	0	1	0	22	26	0	1	6	15	0	1
15. Inhalation therapist	7	0	2	1	10	11	1	1	4	7	1	1
16. Optician	78	0	0	0	88	98	0	0	18	46	0	0
17. EKG and EE technician	2	0	0	0	2	2	0	0	0	1	0	1
Total	3601	210	297	31	4270	5004	260	284	1030	2686	70	153

in the seven Iowa counties. Seven job titles needed over 100 employees trained by 1971 in Council Bluffs, Iowa and Omaha, Nebraska of which the two largest were Associate Degree Nurse with 871 and Orderlies and Nurses' Aides with 805.

Figures for Manufacturing and Industrial Occupations are shown in Table 42. Current vacancies for the major occupational area totaled 118 in the Council Bluffs, Iowa and Omaha, Nebraska area and 37 in the seven Iowa counties. Employers indicated a need for 1,152 trained persons in the Council Bluffs, Iowa and Omaha, Nebraska area by 1971 and for 145 trained persons in the seven Iowa counties. In considering the training needed by job titles, Light-metal Assembler with 121, Screw Machine Set-up Operator with 107 and Machinist with 99 had the highest totals needed by 1971 in the Council Bluffs, Iowa and Omaha, Nebraska area. In the seven Iowa counties, Combination Welder with 34 and Arc Welder with 29 had the highest totals needed by 1971.

As seen in Table 43, a total of 1,060 newly trained employees were needed by January 1, 1969 in Office Occupations in Council Bluffs, Iowa and Omaha, Nebraska with 2,825 needed by January 1, 1971. One hundred eight are needed in the seven Iowa counties by January 1, 1969 and 303 by January 1, 1971. The Council Bluffs, Iowa and Omaha, Nebraska area had more current vacancies in every job title than the other seven Iowa counties. The job titles for Council Bluffs, Iowa and Omaha, Nebraska which needed more than 100 trained were General Clerk, Typist and Clerk-Typist, Secretary, Accounting Clerk, Stenographer, Shipping and Receiving Clerk and Transcribing Machine Operator (Dictaphone). The two top training demands for the seven Iowa counties were Secretary and Bookkeeper.

Table 42. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for manufacturing and industrial occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Machinist	163	19	7	3	187	206	26	27	41	99	9	16
2. Tool and die maker	71	6	3	0	83	98	7	8	19	52	2	4
3. Inspector, floor	63	0	0	0	70	78	0	0	14	36	0	0
4. Inspector, gage	25	0	0	0	25	26	0	0	3	9	0	0
5. Inspector, general	72	1	0	0	73	77	1	2	8	27	0	1
6. Set-up man (job setter)	23	0	0	0	26	32	0	0	5	17	0	0
7. Die setter	22	12	0	0	26	30	12	12	6	16	1	3
8. Heat treater	11	1	0	0	12	12	1	1	2	5	0	0
9. Engine lathe set-up operator	35	0	0	0	36	37	0	0	3	12	0	0
10. Turret lathe set-up operator	8	0	0	0	8	8	0	0	1	2	0	0
11. Milling machine set-up operator	12	2	0	0	13	13	3	3	2	5	1	2
12. Grinding machine operator	17	0	0	0	23	29	0	0	8	19	0	0
13. Screw machine set-up operator	136	10	20	0	167	193	10	10	45	107	1	3
14. Drill press operator	63	5	0	0	67	72	6	6	10	2	2	3
15. Saw and shear operator	0	0	2	0	2	2	0	0	2	3	0	0

Table 42. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
16. Mixing and packing machine operator	8	0	0	0	9	11	0	0	2	6	0	0
17. Machine molder	47	0	8	0	59	64	0	0	17	35	0	0
18. Coremaker	27	0	0	0	29	34	0	0	5	16	0	0
19. Maintenance mechanic	135	8	6	2	148	158	10	11	27	67	3	6
20. Stationary engineer	8	0	1	0	9	9	0	0	2	4	0	0
21. Lay-out man, metal	23	2	0	3	25	25	6	6	4	10	4	5
22. Patternmaker, metal	10	1	2	0	18	19	1	1	0	14	0	0
23. Sheetmetal worker	73	0	4	0	82	90	0	0	16	42	0	9
24. Press operator sheet metal	107	13	11	2	128	142	16	18	32	74	4	0
25. Fabricators	8	0	0	0	9	9	0	0	2	4	0	0
26. Metal plater	13	0	0	0	15	17	0	0	4	9	0	0
27. Light metal assembler	86	0	20	0	136	166	0	0	59	121	0	0
28. Welder, gas	12	1	2	0	14	16	1	1	3	8	0	1
29. Welder, arc	64	46	8	8	79	89	56	58	21	49	15	29
30. Welder, combination	58	36	5	11	70	73	51	55	18	36	18	34
31. Welder, heliarc	17	0	0	0	18	20	0	0	3	8	0	0
32. Metallurgist assistant (technician)	4	0	0	0	4	4	0	0	0	1	0	0

Table 42. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
33. Mechanical engineering technician	24	7	1	2	28	33	9	10	8	19	3	6
34. Draftsman, mechanical	70	6	5	4	87	97	10	11	24	53	5	8
35. Electrical technician	22	0	0	0	24	26	0	0	3	11	0	4
36. Electro-mechanical technician	4	0	0	0	4	4	0	0	0	1	0	0
37. Instrumentation technician	7	0	2	0	9	10	0	0	3	6	0	0
38. Electronic technician	23	0	1	0	25	29	0	0	4	14	0	0
39. Draftsman, architectural	80	7	7	2	95	101	10	12	23	50	4	8
40. Draftsman, map	11	1	0	0	17	19	1	1	7	13	0	0
41. Draftsman, civil	1	0	1	0	2	3	0	0	1	3	0	3
42. Draftsman, electrical	16	1	2	0	19	22	1	1	5	12	0	0
43. Draftsman, electronic	7	1	0	0	7	9	1	1	1	2	0	0
44. Chemical laboratory technician	7	1	0	0	7	7	1	1	1	4	0	0
45. Fork lift truck driver	8	0	0	0	8	8	0	0	1	2	0	0

Table 42. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
46. Heat seal operator	4	0	0	0	4	4	0	0	0	1	0	0
47. Custom wood-worker	59	0	0	0	60	60	0	0	7	19	0	0
Total	1762	186	118	37	2070	2291	239	255	482	1152	72	145

Table 43. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for office occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Secretary	1003	172	23	7	1072	1140	191	201	169	459	36	96
2. Executive secretary	16	0	1	0	17	17	0	0	3	6	0	0
3. Stenographer	360	36	3	0	382	403	37	38	58	158	5	13
4. Transcribing machine operator (dictaphone)	209	11	12	0	235	252	12	14	47	114	2	6
5. Typist and clerk-typist	1084	84	38	1	1170	1221	83	92	194	488	7	33
6. Receptionist	120	14	0	0	126	131	14	16	18	49	1	6
7. Telephone operator (PBX)	178	5	0	0	188	198	5	5	28	76	1	2
8. General clerk	1437	74	31	1	1516	1604	79	84	223	622	12	34
9. Shipping and receiving clerk	321	17	11	0	337	351	19	25	48	131	4	14
10. Stock clerk	195	8	1	0	207	222	9	10	32	89	2	5
11. Duplicating machine operator	71	5	1	0	75	77	5	5	11	29	1	1
12. Collator operator	23	0	3	0	29	30	0	0	8	16	0	0
13. Encoder operator	18	0	0	0	20	22	0	0	4	10	0	0
14. Accounting clerk	719	42	6	2	751	783	45	46	104	289	7	18
15. Billing machine operator	89	6	1	0	99	104	6	6	19	45	1	2

Table 43. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
16. Bookkeeper	189	129	2	0	207	215	133	136	37	88	17	47
17. Bookkeeping machine operator	84	65	1	0	88	92	66	71	12	34	8	26
18. Calculating machine operator	79	7	1	0	83	85	7	7	12	31	1	2
19. Statistical clerks and compilers	138	6	3	0	148	158	6	6	24	64	1	2
20. Underwriter	17	0	0	0	17	19	0	0	2	7	0	0
21. Tellers, bank	35	22	0	0	36	38	22	22	5	14	2	6
22. Proofreaders	9	0	0	0	9	10	0	0	1	4	0	0
23. Salesman, general	7	0	0	0	7	7	0	0	1	2	0	0
Total	6401	703	138	11	6819	7179	739	784	1060	2825	108	303

The job title of Bookkeeping Machine Operator was observed to need almost as many trained employees in 1971 in the seven Iowa counties (26) as did Council Bluffs, Iowa and Omaha, Nebraska.

Employment level in Council Bluffs, Iowa and Omaha, Nebraska versus the seven Iowa counties in the Iowa Western Community College District Area XIII in Data Processing was presented in Table 44. Council Bluffs, Iowa and Omaha, Nebraska listed 28 job vacancies in three different job titles while none were listed by the employers of the seven Iowa counties. In the tabulation of the number needed to be trained, the largest enumeration was for Digital Computer Operator with 27 needed by 1971 in the seven Iowa counties. A total of 271 newly trained workers are needed by 1971 in the Council Bluffs, Iowa and Omaha, Nebraska area and 31 trained workers are needed in the seven Iowa counties. The job title of Key Punch Operator was the only job title listed for current employees in the seven Iowa counties.

As revealed in Table 45, comparison of the employment levels in Council Bluffs, Iowa and Omaha, Nebraska versus the seven Iowa counties, current vacancies indicated 15 in Council Bluffs, Iowa and Omaha, Nebraska, and three in the seven Iowa counties for the Printing and Publishing Occupations. No job title listed a greater number to be trained by 1971 than did the number for Compositor (Typographer) with nine in the seven Iowa counties. In Council Bluffs, Iowa and Omaha, Nebraska the largest demand was reported for Compositor (Typographer) with 56 and Off-set Pressman with 36. Training was needed in all 24 job titles in the Council Bluffs, Iowa and Omaha, Nebraska area while the seven Iowa counties' employers sought training in only 12 job titles.

Table 44. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page Pottawattamie, Mills and Shelby counties for data processing occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Digital computer operator	124	0	0	0	89	94	0	0	0	0	0	27
2. Programmer	202	0	15	0	222	231	0	0	40	96	0	0
3. Systems analyst	75	0	7	0	86	88	0	0	19	39	0	0
4. Supervisor, machine room	26	0	0	0	25	25	0	0	2	7	0	0
5. Key punch operator	314	15	6	0	322	330	15	15	40	113	2	4
6. Tabulating machine	41	0	0	0	42	43	0	0	5	15	0	0
7. Data processing maintenance serviceman	4	0	0	0	4	4	0	0	0	1	0	0
8. Tape librarian	1	0	0	0	1	1	0	0	0	0	0	0
Total	787	15	28	0	791	816	15	15	106	271	2	31

Table 45. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for printing and publishing occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Foreman, printing shop	59	12	0	0	64	66	12	12	11	26	1	4
2. Off-set press man	50	5	5	1	62	67	6	6	17	36	2	2
3. Silk screen printer	3	0	0	0	3	4	0	0	0	2	0	0
4. Job printer	28	2	0	1	36	45	3	3	11	28	1	2
5. Photoengraver	16	0	0	0	18	19	0	0	4	8	0	0
6. Photographer (litho)	19	9	2	0	22	25	10	11	5	13	2	5
7. Photographer (news)	13	2	0	0	13	13	2	2	1	5	0	1
8. Multilith operator	26	1	0	0	28	31	1	1	5	13	0	1
9. Folding machine operator	20	4	0	0	22	25	4	4	4	12	0	1
10. Commercial artist (illustrator)	26	0	0	0	23	25	0	0	0	6	0	0
11. Platen and letter pressman	44	6	1	0	50	53	6	6	10	24	1	2
12. Linotype operator	94	10	4	0	99	100	10	10	14	36	1	3
13. Compositor (typographer)	148	21	2	1	156	157	23	23	23	56	4	9
14. Bookbinder	36	1	0	0	37	42	1	1	4	17	1	0
15. Linotype machinist	12	2	0	0	12	12	3	3	1	4	1	2
16. Bindery, small machine	12	0	0	0	15	16	0	0	4	9	0	0
17. Ink matcher	2	0	0	0	2	2	0	0	0	1	0	0

Table 45. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
18. Camerman radio and television	6	0	0	0	6	6	0	0	1	2	0	0
19. Platemaker (caster)	28	0	1	0	31	31	0	0	6	12	0	0
20. Cutter operator	25	1	0	0	27	31	1	1	5	14	0	0
21. Web pressman	51	0	0	0	56	61	0	0	10	27	0	0
22. Cylinder pressman	3	0	0	0	4	4	0	0	1	2	0	0
23. Machinist press stero type	4	0	0	0	4	4	0	0	0	1	0	0
24. Sales representative	2	0	0	0	2	3	0	0	0	2	0	0
Total	729	76	15	3	792	842	82	83	146	355	14	32

Illustrated in Table 46 are figures for Sales Occupations. Three job titles, Sales Representative, Sales Clerk, and General Salesman, indicated a total number to be trained greater than 100 in the Council Bluffs, Iowa and Omaha, Nebraska area. There were vacancies in six job titles in Council Bluffs, Iowa and Omaha, Nebraska area and vacancies in three job titles in the seven Iowa counties. The job title of Sales Representative reported the greatest need for trainees by January 1, 1969 and January 1, 1971 as well as the most current vacancies.

Comparison of the employment levels for the Service Industry are noted in Table 47. Fifteen vacancies were reported in 12 different job titles in Council Bluffs, Iowa and Omaha, Nebraska while only one for Aircraft Radio Mechanic was reported for the seven Iowa counties. Training demands varied widely with 41 needed to be trained in Council Bluffs, Iowa by 1969, two in the seven Iowa counties by 1969, 79 newly trained needed in Council Bluffs, Iowa and Omaha, Nebraska by 1971, and six needed in the seven Iowa counties by 1971.

Table 48 demonstrated the employment level comparisons for Textiles. Five job titles were listed as having 52 vacancies in the Council Bluffs, Iowa and Omaha, Nebraska area while again only one was recorded for the seven Iowa counties. The job title of All-around Power Sewing Machine Operator had the most current vacancies with 25 which was followed closely by Steam Press Operator with 20 in the Council Bluffs, Iowa and Omaha, Nebraska area. A total of 213 newly trained people are needed by 1971 in the Council Bluffs, Iowa and Omaha, Nebraska area and six by 1971 in the seven Iowa counties. Again the Council Bluffs, Iowa and Omaha, Nebraska reported the greatest training demands for All-around Power

Table 46. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for sales occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Sales representative	324	15	12	0	354	385	18	18	62	167	5	9
2. Salesman, general	173	10	11	2	207	242	12	12	51	131	3	6
3. Salesman, footwear	5	5	0	0	5	5	6	6	1	2	2	2
4. Salesman, gas or electric appliances	2	0	0	0	2	2	0	0	0	1	0	0
5. Salesman, hardware supplies	13	3	1	0	15	14	3	3	3	7	0	0
6. Salesman, men's and boys' clothing	8	3	0	0	9	11	3	3	2	6	0	1
7. Salesman, radio and television parts	8	0	0	0	8	8	0	0	1	2	0	0
8. Salesman, women's and girls' apparel	283	10	0	0	288	293	10	10	33	96	1	3
9. Salesman, advertising	13	0	0	0	13	13	0	0	1	4	0	0
10. Salesman, radio and television time	9	0	0	0	9	9	0	0	1	3	0	0
11. Sales clerk	284	37	2	0	339	340	37	37	83	158	4	11
12. Sales attendant	15	9	1	0	16	16	9	10	3	6	1	4
13. Salesperson, general	35	17	0	1	40	46	22	23	9	23	7	12
14. Salesperson, dry goods	11	2	0	0	11	11	2	2	1	3	0	1

Table 46. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
15. Salesperson, furniture	23	2	0	0	25	27	2	2	4	12	0	0
16. Salesperson, general hardware	7	0	0	0	8	8	0	0	2	3	0	0
17. Salesperson, men's and boys' clothing	0	5	0	0	0	0	5	5	0	0	1	2
18. Salesperson, parts	10	1	1	0	11	12	1	1	2	5	0	1
19. Salesperson, TV and appliance	0	2	0	0	0	0	2	2	0	0	0	1
20. Salesperson, women's and girls' apparel	0	15	0	1	0	0	17	17	0	0	4	7
21. Salesperson, gifts	10	0	0	0	10	10	0	1	1	3	0	0
22. Buyers, general wholesale	12	0	0	0	12	12	0	0	1	4	0	0
Total	1245	136	28	4	1382	34	112	114	261	636	28	60

Table 47. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for service occupations

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Refrigeration mechanic	33	0	1	0	42	47	0	0	12	27	0	0
2. Air conditioning mechanic, commercial	1	0	1	0	2	2	0	0	1	1	0	0
3. Air conditioning mechanic, domestic	7	1	0	0	8	8	1	1	2	3	0	1
4. Furnace installer and repairman, hot air	0	2	1	0	2	1	2	2	2	2	0	1
5. Television and radio service and repairman	4	1	0	0	4	4	2	2	0	1	1	2
6. Electronics mechanic	7	0	7	0	14	14	0	0	8	11	0	0
7. Electric motor repairman	0	0	1	0	1	1	0	0	1	1	0	0
8. Electrical appliance repairman	7	1	0	0	7	8	1	1	1	3	0	0
9. Instrument repairman	2	0	1	0	3	4	0	0	1	3	0	0
10. Aircraft radio mechanic	10	0	0	1	14	18	1	1	5	12	1	2
11. Office machine serviceman	16	0	2	0	20	22	0	0	6	12	0	0

Table 47. (continued)

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
12. Vending machine repairman	2	0	1	0	4	4	0	0	2	3	0	0
Total	89	5	15	1	121	133	7	7	41	79	2	6

Table 48. Employment level in the metropolitan area of Council Bluffs, Iowa, and Omaha, Nebraska, versus the rest of Merged Area XIII found in Cass, Fremont, Harrison, Page, Pottawattamie, Mills and Shelby counties for textile industries

Job title	Present number of employees Sept. 30, 1967		Number of current vacancies Sept. 30, 1967		Anticipated employment				Number needed to be trained by			
	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha	7 Iowa counties	Council Bluffs and Omaha		7 Iowa counties		Council Bluffs and Omaha		7 Iowa counties	
					Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
1. Power sewing machine operator, all-around	351	2	25	0	351	351	2	2	35	105	0	1
2. Power sewing machine operator, regular equipment	23	0	1	0	30	40	0	0	9	26	0	0
3. Hand sewing	3	0	1	0	5	6	0	0	2	5	0	0
4. Tassel machine operator	3	0	0	0	4	4	0	0	1	2	0	0
5. Master tailor	3	0	0	0	4	5	0	0	1	3	0	0
6. Alteration tailor	2	2	0	0	2	2	2	2	0	1	0	0
7. Pattern cutter fabric	3	0	0	0	4	4	0	0	1	2	0	0
8. Steam press operator	90	8	20	1	110	110	9	9	29	53	2	4
9. Furniture, upholsterer	4	0	0	0	4	4	0	0	0	1	0	0
10. Upholsterer cutter	2	0	0	0	2	3	0	0	0	3	0	0
11. Milliner	1	0	0	0	2	2	0	0	1	2	0	0
12. Dry cleaning machine operator	15	2	5	0	20	20	2	2	7	11	0	1
Total	500	14	52	1	538	551	15	15	86	213	2	6

Sewing Machine Operator with 105 and Steam Press Operator with 53 needed by 1971.

In Table 49 were placed the number and percent of returned questionnaires received by occupational area for Omaha, Nebraska. As was indicated earlier, it was difficult to separate the training requirements of Council Bluffs, Iowa and Omaha, Nebraska because of geographic location and, in like manner, the demand for trained workers in Omaha, Nebraska, was of considerable interest to the potential workers from the Iowa Western Community College District Area XIII. The employers receiving questionnaires in the metropolitan area of Omaha, Nebraska represented approximately 40 percent of all employers. The percent of useable returns represented 29.65 percent which was lower than any other population area analyzed. The highest percent of useable returns was 57.14 percent for Aircraft Mechanic and Maintenance Occupations followed by Health Occupations with 55.17 percent.

Comparisons of the training needs by occupational field for the metropolitan area of Omaha, Nebraska, the urban communities (over 2,500) of Merged Area XIII and the rural communities (under 2,500) of Merged Area XIII are shown in Table 50. All three populati n areas had current employees in all of the major occupational areas except Aircraft Mechanic and Maintenance Occupations, and Textile Occupations for Rural Merged Area XIII. Textile employers from Rural Merged Area XIII were the only employers not indicating training demands from the three indicated areas. Training demands by January 1, 1971 for Omaha, Nebraska showed Office and Data Processing Occupations needed 2,871 while Health Occupations needed 2,428. Agricultural Related Occupations with 431 and Office and Data

Table 49. Number and percent of questionnaires received by occupational field in the metropolitan area of Omaha, Nebraska

Occupational questionnaire	Number of questionnaires sent	Questionnaires returned, useable		Mail, returned, not applicable, letter replies and discontinued businesses		Total questionnaires returned	
		number	percent	number	percent	number	percent
Agricultural Related	56	20	35.714	3	5.357	23	41.071
Aircraft Mechanic and Maintenance	7	4	57.143	0	0.000	4	57.143
Automotive and Diesel	79	19	24.051	4	5.063	23	29.114
Construction	100	35	35.000	5	5.000	40	40.000
Food Service	151	26	17.219	7	4.636	33	21.854
Governmental Federal and State	19	1	5.263	1	5.263	2	10.526
Governmental State and Local	20	8	40.000	2	10.000	10	50.000
Health Occupations	29	16	55.172	1	3.448	17	58.621
Manufacturing and Industrial Occupations	73	27	36.986	4	5.479	31	42.466
Office Occupations	98	39	39.796	10	10.204	49	50.000
Printing and Publishing	40	19	47.500	5	12.500	24	60.000
Sales and Service Occupations	201	45	22.388	2	8.333	9	37.500
Total	897	266	29.654	56	6.243	322	35.897

Table 50. Training needs by occupational field for the metropolitan area of Omaha, Nebraska, the urban communities (over 2,500) of Merged Area XIII and the rural communities (under 2,500) of Merged Area XIII

Occupational questionnaire	Present number of employees September 30, 1967			Number needed to be trained by					
				Omaha		Urban Merged Area XIII		Rural Merged Area XIII	
	Omaha	Urban Merged Area XIII	Rural Merged Area XIII	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971	Jan. 1 1969	Jan. 1 1971
Agricultural Related	448	893	234	79	194	158	431	72	145
Aircraft Mechanics and Maintenance	114	4	-	65	151	4	10	2	2
Automotive and Diesel	965	258	52	227	669	80	176	13	29
Construction	1752	501	64	358	959	153	345	34	62
Food Service	3014	546	116	620	1505	88	216	12	37
Governmental State and Federal	32	102	54	6	18	11	34	8	18
Governmental State and Local	1645	795	213	343	812	120	360	27	75
Health	3023	647	114	912	2428	145	314	43	97
Manufacturing and Industrial	1604	336	8	445	1052	109	233	1	4
Office and Data Processing	6633	920	253	1076	2871	162	427	35	107
Printing and Publishing	671	118	14	131	336	18	44	1	6
Sales and Service	1223	225	27	269	637	61	132	4	11
Textile	498	16	-	86	211	2	9	-	-
Total	21622	5361	1149	4617	11843	1111	2731	252	593

Processing with 427 were the greatest training needs for Urban Merged Area XIII. A similar situation was found in Rural Merged Area XIII with 145 trainees needed in Agricultural Related Occupations by January 1, 1971 and 107 trainees needed by Office and Data Processing Occupations. A total of 15,167 trained workers were needed by January 1, 1971 by the employers surveyed.

Tabulation of data from this survey produced total employment figures for three different time periods. Total number of persons reported on payrolls as of September 30, 1967 was 54,861. The total number of persons anticipated to be on payrolls as of January 1, 1969 was 58,766, while total number of persons anticipated to be on payrolls as of January 1, 1971 was 62,707.

A summary of job titles which employers reported as those in need of 100 or more trainees by January 1, 1971 were arranged numerically in Table 51. Forty-three job titles had sufficient trainees requested to be placed on this list. Totals of trainees needed by January 1, 1971 ranged from the 896 of the Associate Degree Nurse to 100 in the job title of Busboy.

Table 51. Occupations ranked who need 100 or more employees trained by January 1, 1971

Job title	Present no. of employees Sept. 30,1967	Anticipated employment Jan. 1, 1971	Number needed to be trained by Jan. 1, 1971
Nurse Associate Degree or R.N.	1202	1671	896
Orderlies and Nurse's Aides	1416	1824	890
Custodian	1449	1663	693
General Clerk	1511	1688	656
Secretary	1175	1341	545
Typist and Clerk-Typist	1168	1313	—521

Table 51. (continued)

Job title	Present no. of employees September 30, 1967	Anticipated employment January 1, 1971	Number needed to be trained by Jan. 1, 1971
Waiter and Waitress	854	1000	436
Nurse, Licensed Practical	432	646	377
Tractor-Trailer Truck Driver	351	570	343
Accounting Clerk	761	829	307
Grocery Stock Clerk	648	744	300
Cook	436	552	268
Cashier	514	603	262
Carpenter	424	533	252
Laborer, Construction	357	480	247
Sales Grain and Feed	386	472	212
Sales, Representative	339	403	176
Stenographer	396	441	171
Sales Clerk	321	377	169
Medical Secretary	119	223	155
Truck Driver, Heavy	326	373	155
Shipping and Receiving Clerk	338	376	145
Salesman, general	183	254	137
Salesman, Driver	404	416	136
Bookkeeper	318	351	135
Maintenance Man	299	328	134
Light metal assembler	86	166	121
Equipment operator (local Government)	279	313	120
Transcribing Machine Operator (Dictaphone)	220	266	120
Key Punch Operator	329	345	117
Kitchen Helper (Washer)	286	310	116
Heavy Equipment Operator	206	249	115
Machinist	182	233	115
Medical Assistant	165	215	112
Screw Machine Set-up Operator	146	203	110
Surgical Technician	64	140	108
Power Sewing Machine Operator, All-around	353	353	106
Medical Laboratory Assistant	128	188	105
Automobile Mechanic	134	187	104
Cook's Helper	230	258	103
Busboy	285	297	100

Comparisons of the ten top ranked job titles for three population areas served by Iowa Western Community College District Area XIII for training needed by January 1, 1971 were indicated in Table 52. Orderlies

and Nurse's Aides ranked second in Omaha, Nebraska and first in both Urban and Rural Merged Area XIII. All remaining rankings were less consistent in arrangement.

Table 52. Top ten ranked job titles for three population areas served by Iowa Western Community College District Area XIII for training needs by January 1, 1971

Omaha		Urban Merged Area XIII		Rural Merged Area XIII	
Occupation	Number	Occupation	Number	Occupation	Number
Nurse, Associate Degree	706	Orderlies and Nurse's Aides	135	Nurse's Aides and Orderlies	59
Orderlies and Nurse's Aides	697	Secretary	121	Nursery Worker	31
Custodian		Equipment operator (local		Secretary	30
General Clerk	587	government)	105	Truck Driver, heavy	25
Typist and Clerk Typist	465	Nurse, Associate		Grader, Agriculture Commodities	21
Secretary	394	Degree	92	Nurse, Associate Degree	18
Waiter and waitress	363	Construction worker	90	Nurse, licensed practical	14
Tractor-trailer Truck Driver	326	Policeman	73	Construction worker	13
Nurse, licensed practical	316	Waiter and Waitress	64	Farm equipment mechanic	12
Grocery stock clerk	277	Custodian	62	General Clerk	12
		Truck driver, heavy	62		
		Salesman, Driver	62		

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

As initially stated, this dissertation was undertaken to determine the number and kinds of skilled, semi-skilled and technician employees in the Iowa Western Community College District Area XIII and Douglas and Sarpy Counties of Omaha, Nebraska. Second, this research was to provide a basis for analyzing the employer implications in the data collected in order to determine the type and timing of vocational and technical training that should be offered by Iowa Western Community College. Third, this data may serve a useful purpose in statewide curriculum planning in area vocational-technical schools and area community colleges in Iowa when used with studies such as was done by Philip Langerman in the Area XI Community College District.

The secondary purposes of this study were to determine the current employees as of September 30, 1967, anticipated employment by January 1, 1969 and January 1, 1971, employee turnover, formal in-plant training, and estimation of the availability of trained workers for 307 job titles from the Dictionary of Occupational Titles.

Summary

This research used a mail survey of the 2,242 employers who employ four or more employees in the Iowa Western Community College District Area XIII and Douglas and Sarpy Counties in Omaha, Nebraska. The lists of employers were obtained from the Iowa Employment Security Commission through the Research Coordinating Unit of the Department of Public Instruction and from the Nebraska Employment Security Commission through their own research department. Eight hundred seventy-five or 39.03 percent

returned questionnaires. The 133 largest employers were contacted by personal interview and 117 or 88 percent of these firms returned questionnaires.

Each questionnaire listed according to the Dictionary of Occupational Titles code numbers and job titles most often found in each of the 13 major occupational areas.

Table 53 gives an illustration of the major occupations surveyed. The largest number of job titles were found in Manufacturing and Industrial Occupations with 54, followed by Government State and Local with 32. The fewest job titles were found in Textiles with 12 and Aircraft Mechanic and Maintenance with 11.

Table 53. Number of employers in each major occupational area and number of job titles on each occupational questionnaire

Major occupational area	Number of employers sent each questionnaire	Job titles on questionnaires
Agricultural Related	226	31
Aircraft Mechanics and Maintenance	17	11
Automotive and Diesel	225	20
Construction	286	29
Food Service	372	15
Governmental State and Federal	53	14
Governmental State and Local	158	32
Health	85	18
Manufacturing and Industrial	103	54
Office and Data Processing	226	24
Printing and Publishing	65	16
Sales and Service	390	31
Textiles	36	12
Total	2242	307

The percent of questionnaires returned varied from a low of 26.08 percent in Food Service to a high of 67.93 in Government State and Federal.

Table 54 presents the number of employees needed in each major occupa-

tional area listed as a proposed training program for Iowa Western Community College. Totals show a need for 5,870 trained employees by January 1, 1969, and 15,160 by January 1, 1971, in the Iowa Western Community College District Area XIII and Douglas and Sarpy Counties of Omaha, Nebraska. When comparing a return which varied from 26.08 percent in Food Service to a 67.93 percent return in Government State and Federal it would seem to be a conservative estimate to assume that these total numbers of trained employees are needed.

Table 54. Number of employees needed by January 1, 1969 and January 1, 1971 by proposed vocational-technical course

Proposed courses to train workers based on job titles used in this study	Number needed to be trained by January 1, 1969	January 1, 1971
Food Processing	35	76
Agricultural Machinery	31	67
Feed and Seed Service	74	223
Not Grouped, Agriculture	169	409
Agriculture Related Occupations Total	309	775
Aircraft and Engine Mechanic	64	144
Aircraft Total	64	144
Automotive Mechanics	79	176
Automobile Body Repair	16	34
Automobile Servicing	59	140
Diesel and Equipment Maintenance	9	31
Truck Driver	133	419
Automotive and Diesel Total	296	800
Heavy Equipment Operator	54	115
Carpentry	161	438
Plumbing	26	54
Painting	6	18
Electrician	31	68
Brick-Block-Concrete Training	53	144
Construction Maintenance	16	35

Table 54. (continued)

Proposed courses to train workers based on job titles used in this study	Number needed to be trained by January 1, 1969	January 1, 1971
Not Grouped, Construction	155	391
Construction Occupations Total	542	1354
Commercial Cooking	174	416
Commercial Baking	8	20
Host and Cashier Training	124	286
Waiter Training	288	663
Retail not grouped	117	372
Food Service Occupations Total	711	1757
Central Office Specialists	10	34
Not Grouped	15	36
Governmental State and Federal Agencies Total	25	70
Governmental Office	17	43
Law Enforcement	28	92
Repair and Service	1	4
Equipment Operators	46	140
General Maintenance	359	869
Not Grouped	38	94
Governmental State and Local Agencies Total	489	1242
Nurse, Associate Degree	341	896
Nurse, Licensed Practical	153	377
Aides (Hospital)	340	911
Medical Assistants	137	315
Operating Room Technician	48	108
Dental Laboratory Technician	2	8
Medical Laboratory Assistant	36	105
Dental Assistant	2	5
Not Grouped, Health	42	113
Health Occupations Total	1101	2838
Machinist, Tool and Die Maker	109	285
Machine Operators	77	191
Pattern Making	22	51
Industrial Mechanic	31	77
Sheet Metal	135	288

Table 54. (continued)

Proposed courses to train workers based on job titles used in this study	Number needed to be trained by January 1, 1969	January 1, 1971
Welding	78	165
Mechanical Technology	40	87
Electrical Technician	4	12
Industrial Electronics	7	20
Architectural Draftsman	35	74
Electronic Draftsman	6	14
Not Grouped	9	26
Manufacturing and Industrial Occupations Total	553	1290
Secretarial Science	272	722
General Clerical	642	1725
General Accounting	242	648
Not Grouped	11	33
Office Occupations Total	1167	3128
Programmer	61	142
Punch Card Accounting	46	133
Data Processing Occupations Total	107	275
Photo Off-set Printing	65	164
Letter Press Printer	63	162
Not Grouped	22	61
Printing, Publishing and Allied Industries Total	150	387
Mid-Management Marketing	166	440
Retail Selling	121	252
Not Grouped, Sales	1	4
Sales Occupations Total	288	696
Conditioned Air, Commercial	17	35
Electronic Service	19	35
Small Machine Repair	8	15
Service Occupations Total	44	85
Power Sewing Machine Operator	44	132
Not Grouped	44	87

Table 54. (continued)

Proposed courses to train workers based on job titles used in this study	Number needed to be trained January 1, 1969	January 1, 1971
Textile Occupations Total	88	219
Total for all programs	5870	15160

Enumeration of Table 55 shows 13,949 males and 14,302 females employed as of September 30, 1967. One thousand one hundred forty-three job vacancies were recorded with 328 listed in the Health Occupations followed by 155 in Manufacturing and Industrial Occupations. There were 1,597 persons taking formal in-plant training on September 30, 1967; this training category decreased to 1,123 by January 1, 1969 and increases to 1,605 by January 1, 1971, which was due primarily to the influence of the Health Occupations.

Conclusions

The originally stated problems of this research were:

1. To analyze the number and kinds of skilled, semi-skilled and technician-workers employed as of September 30, 1967.
2. To analyze the growth in number and kind that will be needed by employers in the Iowa Western Community College District Area XIII and Metropolitan Omaha, Nebraska by January 1, 1969 and January 1, 1971.
3. To obtain an estimate of the availability of trained persons for 307 job titles.
4. To find out the number of job vacancies as of September 30, 1967, employee turnover, formal in-plant training.
5. To determine through interviews with the largest employers the:

Table 55. Summary: number of males and females employed, job vacancies, and formal in-plant training

Occupational areas	Male	Female	Sept. 1967 Total	Job vacancies September 1967	Formal in-plant training Sept. 1967	Jan. 1969	Jan. 1971
Agriculture Related	1478	92	1570	66	19	15	10
Aircraft Mechanics and Maintenance	118	0	118	2	17	25	8
Automotive and Diesel	1264	8	1272	63	42	46	34
Construction	2315	2	2317	126	52	29	37
Food Service	1613	2063	3676	81	218	333	443
Governmental State and Federal	165	23	188	3	0	0	0
Governmental State and Local	2087	566	2653	24	28	31	45
Health	305	3506	3811	328	954	523	953
Manufacturing and Industrial	1627	321	1948	155	69	23	16
Office	914	6190	7104	148	45	26	19
Data Processing	386	416	802	28	7	8	9
Printing, Publishing and Allied Industries	669	134	803	18	42	20	9
Sales	884	497	1381	32	38	28	22
Service	94	0	94	16	5	5	0
Textiles	30	484	514	53	61	11	0
Totals	13949	14302	28251	1143	1597	1123	1605

a. Effects of automation on the present firms and businesses, and

b. Kinds of new, skilled workers needed to maintain anticipated operations

As a result of the analysis made on the tabulated data from the 875 respondents to the mailed questionnaire, the findings of this research would seem to justify the following conclusions:

1. The total employees from the employers surveyed as of September 30, 1967 was comprised of 28,251 semi-skilled, skilled, and technician level employees. Of this number, 13,949 or 49.38 percent were men employed in 281 different job titles. The remaining 14,302 or 50.62 percent were women employed in 158 different job titles. This enumeration shows a higher percent of female employees than is found among the general work force population.
2. Anticipated employment growth by January 1, 1969, over September 30, 1967 were 3,905 employees or an increase of 7.12 percent. While employers expect to increase their total work force by 7.12 percent in the 15 month period from September 30, 1967 to January 1, 1969, they will increase their skilled, semi-skilled and technician employees by 11.02 percent.
3. When the anticipated employment growth was extended to January 1, 1971 continued growth was expected with 7,846 total additional employees or 14.30 percent over the September 30, 1967 level. This expected increase in total employment of 14.30 percent is compared to an increase of 20.19 percent for skilled, semi-skilled and technician employees for the same 27 month period from September 30, 1967 to January 1, 1969. As anticipated employers

showed a greater demand for skilled, semi-skilled and technician trained workers.

4. Current job vacancies totaled 1,143 or 4.05 percent of the employed work force as of September 30, 1967. Employers would have employed 1,143 workers possessing the desired skills if they had been available for employment.

5. The number of employees expecting to complete formal in-plant training within the industrial setting was 1,597 on September 30, 1967, 1,123 on January 1, 1969, and 1,605 on January 1, 1971. The number of trained employees through formal in-plant training is considerably less than the need for new trained employees needed by industry.

6. The projected need for trained employees in skilled, semi-skilled and technician level jobs was 3,112 by January 1, 1969 and 5,705 by January 1, 1971. A definite need was shown for trained employees. Additional vocational and technical training programs are needed to provide the trained employees needed by industry.

7. Employers indicated in 106 of 306 job titles or 34.53 percent that employees were in short supply by 50 percent or more of the employers responding.

8. Council Bluffs, Iowa and Omaha, Nebraska employ 24,120 or 85 percent of the skilled, semi-skilled and technician level employees reported by employers in the Iowa Western Community College District Area XIII and Douglas and Sarpy Counties of Omaha, Nebraska with 4,131 of 15 percent employed in the seven Iowa counties indicated in this research as of September 30, 1967.

9. More job vacancies were reported in the seven Iowa counties proportionally than were reported in the Council Bluffs, Iowa and the Omaha, Nebraska area. The seven Iowa counties had 15 percent of the skilled employees and 24.93 percent of the job vacancies. This tends to substantiate the belief that it is more difficult to fill job vacancies when they occur in the more rural areas.

10. Within the Western Community College District Area XIII and metropolitan Omaha, Nebraska surveyed for this study, 60.76 percent of the skilled, semi-skilled and technician workers were employed in Omaha, Nebraska 35.35 percent in urban (above 2,500) areas of Merged Area XIII and only 3.89 percent in rural (below 2,500) areas of Merged Area XIII. Health job titles of Associate Degree Nurse, Orderlies and Nurse's Aides were the most critical training needs of the three population areas designated above.

11. A majority of the firms with over 100 employees that were personally interviewed saw little change in the number they employed as a result of automation. It was believed that automation tended to create more jobs, except for specialized industries, rather than eliminate jobs, but it did create a need for increased training to bring about a change in skills. Increased business by the firm and extensive retraining of present employees would tend to stabilize their employment. It was very difficult for employers to predict the number of additional employees needed beyond one year as well as those special skilled people which they might need due to automation.

Since more than 50 percent of the working force surveyed were women, it appears that either more women, than the national average would indicate, work in Merged Area XIII and metropolitan Omaha, Nebraska or that a larger number of the kinds of businesses which employ predominantly women were surveyed. This has social implications as well as indicating the need for child care training which was not included as a job title in this survey. The larger percent of growth for skilled, semi-skilled, and technician workers over all workers surveyed indicates agreement with national labor predictions.

One-third of the job titles chosen for this survey were found to be in short supply by one-half of the employers responding. This shows that the economic and political pressures of the present economy have created shortages in definite skills. Because 85 percent of the skilled, semi-skilled and technician level employees were reported by employers in the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska, there is little justification for satellite centers outside the metropolitan area except for the following programs: Hospital Aides, Secretarial Science, Equipment Operators and Sales, Feed and Grain.

Three-fifths of the skilled, semi-skilled and technician level employees were employed in Omaha, Nebraska, while only two-fifths of the questionnaires were sent to employers in Omaha, Nebraska. This demonstrates the great potential for trained workers and the necessity for additional kinds of research to pinpoint training needs and to coordinate with other educational agencies in the metropolitan area.

The information presented in the conclusions to this study provide adequate evidence that more vocational and technical education programs are needed to train sufficient employees to meet the expanding demands of industry in the Iowa Western Community College District and metropolitan Omaha, Nebraska.

Recommendations

The purpose of this research was to determine the need for skilled, semi-skilled, and technician level employees in the Iowa Western Community College District Area XIII and Douglas and Sarpy Counties of Omaha, Nebraska. An examination of Table 56 shows the list of vocational-technical programs presently offered or in the planning stage for the 1967-1968 school year at Iowa Western Community College.

Table 56. Vocational-technical programs at Iowa Western Community College for 1967-1968

Course	Offering	Planning
Associate Degree Nursing	x	
Auto Mechanics	x	
Aviation A-P	x	
Business Office Receptionist	x	
Child Care Worker	x	
Dental Assistant	x	
Diesel		x
Electronic Data Processing		x
Electronics, Industrial		x
Farm Equipment and Maintenance	x	
Machine Shop		x
Medical Assistant	x	
Marketing, Department Store		x
Operating Room Technician	x	
Practical Nursing	x	
Printing-Linotype	x	
Printing-Offset	x	
Secretarial	x	
Welding		x

After examining the findings, this research appears to indicate a need to provide vocational-technical programs in the following areas, based on the number of employees needed by employers as of January 1, 1969 and January 1, 1971. Furthermore, the findings of this study provide sufficient evidence to show that the board of directors of the Iowa Western Community College should offer the following cluster-skilled vocational-technical education programs to provide trained employees to fill jobs in the greatest demand by employers of Merged Area XIII and metropolitan Omaha, Nebraska.

Recommended Vocational-Technical Programs

For 1969	For 1971
	Agriculture Business
Automotive Mechanics	Automotive Mechanics
	Automotive Servicing
Aircraft and Engine Mechanic	
	Aircraft and Engine Mechanic
Carpentry	Carpentry
Food Service	Food Service
General Maintenance	
	Law Enforcement
Associate Degree Nurse	Associate Degree Nurse
Licensed Practical Nurse	Equipment Operators
Hospital Aides	General Maintenance
Medical Assistants	Licensed Practical Nurse
Machinist, Tool and Die Maker	Hospital Aides
Machine Operators	Medical Assistants
Sheet Metal Work	Operating Room Technician
Welding	Medical Laboratory Assistant
Secretarial Science	Machinist, Tool and Die Maker
General Clerical	Machine Operators
General Accounting	Sheet Metal Work
Photo Off-set Printing	Welding
Letter Press Printer	Secretarial Science
Mid-Management Marketing	General Clerical
Retail Selling	General Accounting
	Programmer
	Punch Card Accounting
	Photo Off-set Printing
	Letter Press Printer
	Mid-Management Marketing

Retail Selling
Salesman-Driver
Truck Driver, Heavy
Laborer, Construction

Since funds and facilities will normally be limited, it is necessary that sound decisions be made in regards to initial training programs. Therefore, a recommended program training list as shown in Table 57, including number of sections and size of class, is shown according to priority with the most essential listed first. The list shows that law enforcement is last because of least demand. One of the reasons for this result was the lack of response to the questionnaire in the metropolitan area of Council Bluffs, Iowa and Omaha, Nebraska.

Comparison between this research and that completed by Philip Langerman in Area XI Community College District shows many similarities as well as a few differences. This survey used 1,509 less businesses with three more occupational areas and 89 more job titles. The smaller number of questionnaires sent out was made possible by the use of a stratified random sample for metropolitan Omaha, Nebraska. Figures indicate about three percent more women in the work force contacted by this study and approximately 6,000 more individuals were employed by the employers surveyed as compared to the Area XI total number surveyed. The top five job titles reflecting training needs in both merged areas were as follows:

Merged Area XI	Merged Area XIII
General Clerk	Nurse, Associate Degree
Typist and Clerk Typist	Orderlies and Nurse's Aides
Orderlies and Nurse's Aides	Custodian
Carpenter	General Clerk
Secretary	Secretary

It can be noted that three of the five job titles are found in both lists.

Table 57. Recommended number of sections and class size for vocational-technical programs in order of priority

Program	1969				1970				1971			
	Day		Evening		Day		Evening		Day		Evening	
	Sec.	No.	Sec.	No.	Sec.	No.	Sec.	No.	Sec.	No.	Sec.	No.
General Clerical	4	20	4	20	4	20	6	20	5	20	8	20
Hospital Aides	4	22	4	20	6	22	6	20	8	22	8	20
Associate Degree Nurse	3	20			4	20			6	20		
General Maintenance	2	20	4	20	3	20	6	20	3	20	8	20
Secretarial Science	2	20	3	20	3	20	3	20	4	20	4	20
Food Service	2	20	2	16	4	20	4	16	3	20	5	16
General Accounting	2	20	3	20	3	20	3	20	4	20	4	20
Mid-Management Marketing	2	20	2	18	2	20	3	18				
Carpentry	2	20	2	18	2	20	3	18	3	20	4	18
Licensed Practical Nurse	4	20	1	18	4	20	2	18	4	20	5	18
Medical Assistants	2	20	2	18	2	20	3	18	3	20	5	18
Sheet Metal Work	1	20	3	20	1	20	4	20	2	20		
Machinist, Tool and Die Maker	2	20	2	18	2	20	3	18	3	20	4	18
Retail Selling	1	20	2	18	1	20	3	18	2	20	4	18
Agriculture Business							2	18	2	20	2	18
Machine, Operator							1	18	2	20	4	18
Automotive Mechanics	2	20	2	16	2	20	2	16	3	20	3	16
Photo Off-set Printing					2	20	2	20	1	18	3	18
Letter Press Printer					1	20			3	20	3	18
Aircraft and Engine Mechanic	2	20	2	12	2	20	2	14	2	20	3	14
Programmer									2	20	3	18
Equipment Operators							1	16	2	20	3	16
Automotive Servicing					1	20	2	16	3	20	3	16
Punch Card Accounting									1	20	3	18
Operating Room Technician					1	20			2	20	1	18
Medical Laboratory Assistant									1	20	2	18
Law Enforcement					1	20			2	20	3	20

Anticipated employment growth of employees in the Merged Area XIII survey was only about one-half the increase found in Merged Area XI. This was different in part because of the different projection procedures used. A more conservative method was used in this study.

The greatest number of vacancies were found outside the metropolitan areas in both surveys.

This research was based on only those employers who employ four or more workers within the Iowa Western Community College District Area XIII and Douglas and Sarpy Counties of Omaha, Nebraska. It is not sound to generalize these findings beyond the Iowa Western Community College District without considering additional information. The findings of this research should be one of many factors taken into consideration by the Iowa Western Community College Board of Directors and administrative staff in selecting a priority of vocational-technical educational offerings by the community college. The State Department of Public Instruction, Vocational Education Division, will have a copy of these findings made available for its use in determining the need for establishing vocational-technical education programs within the Iowa Western Community College District. This research will have fulfilled a need if it has provided pertinent information as to the need for trained workers and, therefore, provided rationale for establishing a priority for vocational-technical education courses to be offered by Iowa Western Community College.

Additional research

The values derived from a research study is its implications for the need of further research. The results of this study indicate that it may

be of value to conduct similar surveys in each of the area vocational-technical or area community college districts in Iowa. Coordinated studies of the need for skilled, semi-skilled, and technician employees in all area community college districts in Iowa would provide the State Department of Public Instruction with important criteria upon which they can base approval for vocational and technical courses by area vocational school districts. Because of the rapid technological advancement, this study should be repeated in three years to determine the changes in the employer need for skilled, semi-skilled and technician employees in the Iowa Western Community College District and metropolitan Omaha, Nebraska. It is recommended that further studies use more condensed questionnaires and accompanying materials and that the entire survey be conducted on a random basis drawing selected percentages from different sized employee firms.

Studies should be conducted to ascertain the need for additional educational programs which may effect the employee's productivity and value to the employers.

Follow-up studies of graduates need to be undertaken to help evaluate the success of the program as well as assisting to improve the organization and content of the programs. In-migration research is needed to know what students are transferring from other community colleges and other educational agencies. Cooperative organization should be insured by all levels of educational agencies within the Merged Area XIII District and Metropolitan Omaha to determine existing programs and number of students in these programs.

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A special appreciation is extended to my wife, Eva, for her patience and assistance during the course of this study and to our two sons, Bruce and Mark.

APPENDIX A. COVER LETTER, INSTRUCTIONS, QUESTIONNAIRES, AND JOB DESCRIPTIONS

IOWA WESTERN COMMUNITY COLLEGE

321 Sixteenth Avenue
COUNCIL BLUFFS, IOWA 51501
TELEPHONE (712) 328-3831

ROBERT D. LOOFT, *Superintendent*

Dear Employer:

During the next few weeks, the staff of Iowa Western Community College of Council Bluffs, Iowa will be conducting a survey to determine the number of people needed with certain skills in all firms and industries employing four or more persons in the new merged Area XIII district, including Cass, Fremont, Harrison, Mills, Page, Pottawattamie and Shelby counties, as well as Douglas and Sarpy counties of Metropolitan Omaha.

The results of this survey will provide pertinent information relative to the training needs for semi-skilled, skilled and technician level workers in the territory described above.

In order to conduct a successful survey, we need the cooperation and assistance of many people such as yourself.

Recognizing your busy schedule and not wishing to infringe upon your valuable time anymore than is necessary, we have attempted to prepare our questionnaire and instruction sheet with this in mind. We sincerely hope that the structure and purpose of our questionnaire meets with your approval.

We are enclosing a questionnaire for you to use in listing your skilled, semi-skilled and technician level workers presently employed and your predicted needs for these kinds of employees during the next 1 - 3 years. In this survey, we are only concerned with the firms that are actually located in the seven Iowa counties mentioned above plus the metropolitan area of Omaha.

A number of agencies throughout the area are cooperating with our staff in this important endeavor. They are as follows: Iowa and Nebraska Employment Security Commission, Iowa and Nebraska Cooperative Area Manpower Planning System, the Iowa State Department of Public Instruction, the Iowa Development Commission, the Iowa Manpower Development Council, the Industrial Relations Center of Iowa State University, several Chambers of Commerce in the area, and the Iowa Department of Vocational Rehabilitation.

We will appreciate your completing the enclosed questionnaire and returning it in the self-addressed, stamped envelope at your earliest convenience. The results of this survey will enable us to develop training programs to meet the needs for skilled workers. One of our goals is to provide well trained persons to meet the labor demands of business firms and industry in this area. We sincerely hope that you will cooperate in this matter.

Sincerely,

Robert D. Looft, Superintendent
IOWA WESTERN COMMUNITY COLLEGE

RDL/bbs

Encls.

IOWA WESTERN COMMUNITY COLLEGE

321 16TH AVENUE

COUNCIL BLUFFS, IOWA 51501

TELEPHONE (712) 328-3831

ROBERT D. LOOFT, *Superintendent*

November 6, 1967

INFORMATION CONCERNING THE AREA XIII SCHOOL

As a result of legislative action during the 1965 session the state was divided into sixteen areas for the purpose of serving the educational needs of the adult beyond high school age. A combination of local, state and federal financing will make it possible to provide a very comprehensive education program below the baccalaureate degree level.

Area XIII includes the counties of Harrison, Pottawattamie, Mills, Fremont, Page, Cass, Shelby and parts of other adjoining counties. An area Board of Education with representatives chosen from nine director districts within the area was elected to operate the school.

The curriculum of the school will provide programs of instruction for persons with a wide diversity of interests. Among these are:

Vocational-Technical programs designed to develop skills and technical knowledge needed for occupational competency.

Two year Arts & Sciences courses: Liberal Arts, general education, pre-professional and terminal education.

Continuing or adult education courses.

High school completion for adults.

Architects have been retained to design a new school facility to serve the area. A 282-acre site has been purchased and is located approximately two miles northeast of Council Bluffs.

The extensive skilled needs survey now under way by the school in the seven-county area plus the metropolitan area of Omaha will provide a basis upon which to establish and develop the curriculum.

The time table calls for the operation of classes in temporary facilities until the new facility is ready for occupancy in the fall of 1969.

* * * * * * *

OMAHA CHAMBER OF COMMERCE
800 FARNAM BUILDING
TELEPHONE 341-1234
OMAHA, NEBR. 68102

December 8, 1967

Gentlemen:

Officials of the Iowa Western Community College, located in Council Bluffs, Iowa, have been contacted by firms in the Omaha area about the possibilities of providing specialized vocational-technical programs designed to develop skills and technical knowledge needed for occupational competency.

As a result of this interest and the close geographic association the college holds with Omaha, a survey will be undertaken to find the number of skilled, semi-skilled, and technician level workers presently employed by employers of four or more persons in the metropolitan area of Omaha. The survey will help to determine the kind of curriculum to be followed in the future training of the individuals to be employed by area employers.

Iowa Western Community College has been cooperating with the Employment Service of the State of Nebraska, the Area V Cooperative Area Manpower Planning System Committee, and the Omaha Chamber.

Mr. Larry D. Meyers, Research Assistant, will conduct the survey and plans to visit 105 firms which employ over 100 persons and sample by mail about 750 other firms employing less than 100. The interviews will be conducted the week prior to Christimas and the mailing around the first of the year.

Thank you for your interest and cooperation.

Cordially,

Warren Johnson, Director
Special Projects Division

COUNCIL BLUFFS
ACCREDITED CHAMBER OF COMMERCE
CHAMBER OF COMMERCE

September 18, 1967

Gentlemen:

Officials of the Iowa Western Community College with main offices located in Council Bluffs have informed us that they will be conducting a mail survey of local business and industries in an attempt to establish the types of training skills required by Southwestern Iowa employers.

Mr. Warren Morrow of Iowa Western indicates that Larry Meyers, a graduate student of Iowa State University, will be conducting this survey as a project toward his graduate degree. The survey will be a rather complete study of all businesses in this area so that the curriculum to be followed in the training of individuals by Iowa Western can be the most useful and functional possible.

This office would encourage the business community to cooperate with these members of Iowa Western staff as they conduct this study so that our college will be able to provide the most useful service possible.

Thank you for your interest and concern.

Respectfully,

Darrell Rodger

Darrell Rodger, Acting General Manager
COUNCIL BLUFFS CHAMBER OF COMMERCE

DR:cw

IOWA WESTERN COMMUNITY COLLEGE

321 Sixteenth Avenue
COUNCIL BLUFFS, IOWA 51501
TELEPHONE (712) 328-3831

ROBERT D. LOOFT, *Superintendent*

INSTRUCTIONS FOR COMPLETING SKILLED NEEDS SURVEY QUESTIONNAIRE

Please check all job title descriptions before answering the questionnaire, as we may define various job titles slightly different than your firm. A list of job descriptions has been developed for each job title and is attached for your reference. The job descriptions are listed in the same order as the job titles on the questionnaire. Leave columns 6 - 17 on the questionnaire blank for those job titles not found in your firm.

Item 1 - Enter the total number of employees on your payroll as of September 30, 1967. If you are a branch or division of a parent company enter only those employees at your location.

Item 2 - Enter the total number of persons you estimate will be on your payroll as of January 1, 1969.

Item 3 - Enter the total number of persons you estimate will be on your payroll as of January 1, 1971

Item 4 - For Office Use Only - leave blank for coding.

Item 5 - List additional job titles in which you have a need for trained workers that are not listed who require less than a four-year college degree for employment.

Items 6 & 7 - Enter the total number of male and female workers (excluding Trainees) employed in each job or occupation listed in Item 1.

Item 8 - Enter the number of current job vacancies you presently have for each job title.

Items 9 & 10 - Enter the total number of workers you expect to have in each job or occupation on January 1, 1969 and January 1, 1971. In arriving at these figures take into consideration any anticipated expansion or contraction and assume that adequate supplies of labor and materials will be available and that business conditions will remain constant.

Item 11 - Enter the per cent you estimate will be leaving your employment per year due to death, retirement or promotion.

Item 12 - Enter the number of current trainees participating in a formal In-Plant Training Program.

Items 13 & 14 - Enter the number of workers who will complete In-Plant Training by January 1, 1969 and January 1, 1971.

Items 15, 16 & 17- Check (x) the most appropriate description of the supply of trained persons available now as you know it from your experience.

NOTE: Return only the questionnaire. Thank you.

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

(2) Total number of persons you estimate will be on your payroll Jan. 1, 1969 /_____/

(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

IOWA WESTERN COMMUNITY COLLEGE
321 Sixteenth Avenue
Council Bluffs, Iowa 51501
Phone 328-3831

SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

_____

Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
525.8841	Meat Dresser												
412.886	Poultry Technician												
520.8851	Chopping-Mach. Operator												
525.387	Meat Grader												
525.8842	Final Dressing Inspector												
292.358	Salesman-Driver												
529.782	Dairy Proces. Equip. Op.												
029.381	Laboratory Tester												
022.168	Laboratory Supervisor												
142.081	Floral Designer												
407.138	Greens Superintendent												
409.181	Tree Surgeon												
404.884	Tree Pruner												
406.887	Nursery Worker												
262.358	Salesman Grain & Feed												
049.3842	Feed Research Aid												
520.885	Ag. Feed Mix. Specialist												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

(2) Total number of persons you estimate will be on your payroll Jan. 1, 1969 /_____/

(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

_____

Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker: 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
049.3841	Biological Aid												
905.883	Truck Driver, Heavy												
424.883	Sprayer												
906.883	Serviceman Liquid-Fertilizer												
276.358B	Salesperson, General Hardware												
168.287	Grader Agricultural Commodity												
624.281	Farm Equipment Mechanic												
624.282	Farm Equipment Mechanic Helper												
624.381	Farm Machinery Setup Man												
810.782	Ag Machinery Welder												
223.388	Ag. Machinery Parts Man												
276.158	Salesman Ag. Machinery												
624.781	Assembly Repairman Ag. Machinery												
467.384	Artificial-Breeding Technician												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

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(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
621.281A	Aircraft and Engine Mechanic												
621.281B	Airplane Inspector												
621.381A	Flight Test Shop Mechanic												
621.281C	Aircraft Engine Tester												
621.381B	Mechanic, Flowmeter Test and Certification												
621.281D	Supercharger Mechanic												
621.281E	Hydraulic Tester												
621.281F	Carburetor Man												
710.281	Instrument Man												
823.281	Aircraft Radio Mechanic												
912.887	Lineman												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

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(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

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Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
620.281A	Automobile Mechanic												
620.381	Automotive Tune-Up Mechanic												
620.281B	Front End Alignment Man												
620.281C	Transmission Mechanic												
620.281D	Brakeman, Automobile												
620.281E	Automobile Air Conditioning Mechanic												
620.281F	Automobile Maintenance Mechanic												
223,3872	Automotive Parts Man												
807.381	Automobile Body Repair												
845.781	Automobile Spray Painter												
915.867	Automobile Service Station Attendant												
620.281G	Tractor Mechanic												
625.281A	Gasoline Engine Repairman (2- and 4-cycle)												
625.281B	Diesel Mechanic												
620.281H	Transmission Mechanic (Diesel)												
625.281G	Fuel Injection Serviceman (Diesel)												
862.381	Pipe Fitter Diesel Engine												

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

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(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

IOWA WESTERN COMMUNITY COLLEGE
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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

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Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirememt or promotiom (per year)	In-Plant Training (Formal)			Check present supply of trained worker: 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
904.883	Tractor-Trailer Truck Driver												
906.883	Light Truck Driver												
915.884	Tire Repairman												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

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(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

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Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
160.288	Estimator												
860.381	Carpenter												
860.131	Carpenter, Foreman												
864.781	Floor Layer												
866.381	Roofer												
862.381A	Plumber												
862.381B	Pipe Fitter												
861.381	Bricklayer (Mason)												
824.281	Electrician												
869.381	House Repairman												
842.781	Plasterer												
382.884	Janitor												
741.884	Painter, Spray												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

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(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

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Phone Number_____

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D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
001.281	Draftsman, Architectural												
003.281B	Draftsman, Electrical												
017.281	Draftsman, Map												
160.288	Estimator												
860.131	Carpenter, Foreman												
860.381	Carpenter												
864.781	Floor Layer												
866.381	Roofer												
862.381A	Plumber												
862.381B	Pipe Fitter												
861.381	Bricklayer (Mason)												
824.281	Electrician												
869.381	House Repairman												
842.781	Plasterer												
859.883A	Heavy Equip. Operator												
850.883A	Bulldozer Operator												
859.883B	Dragline Operator												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

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(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

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Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
850.883B	Power Shovel Operator												
620.282B	Heavy Equipment Mechanic												
620.282A	Construction Equipment Mechanic												
869.131	Concreting Foreman												
570.132	Concrete Batching and Mixing Plant Foreman												
570.885	Concrete Mixer Operator												
852.883A	Concrete Paver Operator												
852.883B	Concrete Paving Machine Operator												
900.883	Concrete Mixing Truck Driver												
821.381	Lineman												
869.884	Construction Worker												
801.781	Structural-Steel Worker												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

(2) Total number of persons you estimate will be on your payroll Jan. 1, 1969 /_____/

(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

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Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
313.168	Executive Chef												
313.131	Chef												
526.781	Baker												1
316.884	Meat Cutter (Butcher)												90
315.381	Cook												
317.887	Cook's Helper												
352.868	Host												
310.868	Hostess												
211.468	Cashier												
311.878A	Waiter and Waitress												
311.878B	Busboy												
318.887	Kitchen Helper (Washer)												
324.878	Bellhop												
526.886	Bakery Helper												
290.877	Grocery Stock Clerk												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

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(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

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SKILLED NEEDS SURVEY

Name of Business_____

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Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker: 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
143.382	Photographer												
162.118	Contract Specialist												
168.368	Title Clerk												
249.368	License Clerk												
199.288	Traffic Technician												
205.388	Civil Service Clerk												
168.168	Building Inspector												
168.2872	Sanitary Inspector												
168.268	License Inspector												
373.168	Fire Inspector												
168.1682	Land-Use Technician												
232.368	Post Office Clerk												
233.388	Mail Carrier												
382.884	Custodian												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

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Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker: 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
188.188	Assessor												
168.168	Building Inspector												
162.158	Purchasing Agent												X
249.388	Town Clerk												
375.2681	Policeman												
375.2682	Policewoman												
373.884	Fireman												
377.868	Deputy Sheriff												
729.281	Electric-Meter Repairman												
824.381	Street-Light Serviceman												
710.281	Water-Meter Repairman												
710.884	Parking-Meter Serviceman												
954.782	Pump-Station Operator, Waterworks												
955.130	Senior-Sewage-Plant Operator												
955.782	Sewage-Plant Operator												
955.7822	Incinerator Operator												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

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SKILLED NEEDS SURVEY

Name of Business_____

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Phone Number_____

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D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
954.782l	Water Service Dispatcher												
912.384	Airport Serviceman												
912.887	Lineman												
621.281A	Aircraft and Engine Mechanic												
249.368	Library Assistant												
075.128	Nurse, Public Health												
313.138	Cook Head, School Cafeteria												
899.381	Maintenance Man												
382.884	Custodian												
901.883	Equipment Operator												
905.883	Truck Driver, Heavy												
620.282	General Purpose Mechanic												
812.884	Welder Combination												
860.381	Carpenter												
862.381A	Plumber												
824.281	Electrician												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

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SKILLED NEEDS SURVEY

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D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
079.378A	Nurse, Associate Degree												
079.378B	Nurse, Licensed Practical												
355.878A	Orderlies and Nurse's Aides												
079.368	Medical Assistant												
355.878B	Attendant												
078.381	Medical Laboratory Assistant												
201.3682	Medical Secretary												
100.388	Medical Record Librarian												
249.388	Medical Record Clerk												
079.378C	Surgicial Technician												
078.368A	X-Ray Technician (Radiologic Technologist)												
079.128	Occupational Therapy Aide												
079.268	Inhalation Therapist												
712.381	Dental Laboratory Technician												
078.368B	Dental Hygienist												
079.378D	Dental Assistant												
713.381	Optician												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

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SKILLED NEEDS SURVEY

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Business Description (Product or Service)_____

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		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
007.081	Optical Technician												

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Name and Title of Person Completing Questionnaire

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Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

(2) Total number of persons you estimate will be on your payroll Jan. 1, 1969 /_____/

(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

IOWA WESTERN COMMUNITY COLLEGE
321 Sixteenth Avenue
Council Bluffs, Iowa 51501
Phone 328-3831

SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

_____

Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
600.280A	Machinist												
601.280	Tool and Die Maker												
609.381	Inspector, Floor											961	
601.281	Inspector, Gage												
609.684	Inspector, General												
609.380A	Engine Lathe Set-up Operator												
604.380	Turret Lathe Set-up Operator												
605.885	Milling Machine Set-Up Operator												
616.380B	Set-Up Man (Job Setter)												
616.380C	Die Setter												
603.280	Grinding Machine Operator												
604.782	Screw Machine Set-Up Operator												
606.782	Drill Press Operator												
518.782	Machine Molder												
518.381	Coremaker												
638.281	Maintenance Mechanic												
600.381	Lay-Out Man												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

(1) Total number of persons on your payroll on Sept. 30, 1967 /_____/

(2) Total number of persons you estimate will be on your payroll Jan. 1, 1969 /_____/

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IOWA WESTERN COMMUNITY COLLEGE
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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

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Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
600.280B	Patternmaker, Metal												
693.281	Patternmaker, Metal, Bench												
804.281	Sheet Metal Worker												
504.782	Heat Treater												
741.884	Painter, Spray												
811.884	Welder, Gas												
810-884A	Welder, Arc												
812.887	Welder, Combination												
810.884B	Welder, Heliarc (Gas Shielded Arc)												
810.782	Welding Machine Operator, Arc												
950.782	Stationary Engineer												
011.281	Metallurgist, Assistant (Technician)												
007.281	Draftsman, Mechanical												
003.181A	Electrical Technician												
710.281	Electro-Mechanical Technician												
007.181	Mechanical Engineering Technician												
022.281	Chemical Laboratory Technician												

1967

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

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(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

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Phone 328-3831

SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

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Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
003.281A	Instrumentation Technician												
003.181B	Electronic Technician												
001.281	Draftsman, Architectural												
003.281B	Draftsman, Electrical												
003.281C	Draftsman, Electronic												
017.281	Draftsman, Map												
617.280	Press Oper. Sheet Metal												

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Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

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(3) Total number of persons you estimate will be on your payroll Jan. 1, 1971 /_____/

IOWA WESTERN COMMUNITY COLLEGE
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Phone 328-3831

SKILLED NEEDS SURVEY

Name of Business _____

Business Description (Product or Service) _____

Business Address _____

_____

Phone Number _____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
201.3681	Secretary												
202.388	Stenographer												
208.588	Transcribing Machine Operator (Dictaphone)												
203.588	Typist and Clerk Typist											961	
237.368	Receptionist												
235.862	Telephone Operator (PBX)												
209.588	General Clerk												
222.387	Shipping and Receiving Clerk												
223.3871	Stock Clerk												
207.7821	Duplicating Machine Operator												
208.885	Collator Operator												
214.488A	Accounting Clerk												
214.488B	Billing Machine Operator												
210.388	Bookkeeper												
215.388	Bookkeeping Machine Operator												
216.488	Calculating Machine Operator												
216.388	Statistical Clerks and Compilers												

Name and Title of Person Completing Questionnaire _____ Date _____

Confidential Report

Company Employment

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

_____

Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker. 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
213.382	Digital Computer Operator												
020.188	Programmer												
012.168	Systems Analyst												
213.582	Keypunch Operator												
213.782	Tabulating Machine Operator												
239.388	Data Processing Maintenance Service												
213.138	Supervisor, Mach. Room												

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Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

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IOWA WESTERN COMMUNITY COLLEGE
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Phone 328-3831

SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

Business Address_____

Phone Number_____

Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
659.130	Foreman, Printing Shop												
651.782A	Offset Pressman												
207.7822	Multilith Operator												
651.782B	Platen Pressman												
650.582	Linotype Operator												
973.381A	Compositor (Typographer)												
979.884	Silk Screen Printer												
973.381B	Job Printer												
971.381	Photoengraver												
972.382	Photographer (Lithographic)												
143.062	Photographer (News)												
653.782	Folding Machine Operator												
627.281	Linotype Machinist												
77.884	Bookbinder												
42.081	Commercial Artist												
699.782	Cutter Operator												

Name and Title of Person Completing Questionnaire

Date

Confidential Report

Company Employment

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SKILLED NEEDS SURVEY

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Phone Number_____

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D.O.T. Code Number Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4.258	Sales Representative												
0.478	Sales Clerk												
0.468	Sales Attendant												
9.358A	Salesman, General												
3.358A	Salesman, Footwear												
8.358A	Salesman, Gas or Electric Appliance												
6.358A	Salesman Hardware Supplies												
3.358B	Salesman, Men's and Boy's Clothing												
8.358B	Salesman, Radio and Television Parts												
3.358C	Salesman, Women's and Girls' Apparel												
9.458	Salesperson, General												
4.358A	Salesperson, Dry Goods												
4.358B	Salesperson, Furniture												
6.358B	Salesperson, General Hardware												
3.458A	Salesperson, Men's and Boy's Clothing												
9.358B	Salesperson, Parts												
8.358C	Salesperson, Television and Appliances												

.458 B Salesperson, Women's & Girl's Apparel

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_____ _____

Name and Title of Person Completing Questionnaire Date

Confidential Report

Company Employment

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SKILLED NEEDS SURVEY

Name of Business_____
Business Description (Product or Service)_____
Business Address_____
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Phone Number_____

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D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained workers 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
637.281C	Refrigeration Mechanic												
637.281A	Air Conditioning Mechanic, Commercial												
637.281B	Air Conditioning Mechanic, Domestic												
869.281	Furnace Installer and Repairman, Hot Air												
633.281	Office Machine Serviceman												
720.281	Television and RadioService And Repairman												
828.281	Electronics Mechanic												
721.281	Electric Motor Repairman												
723.884	Electrical Appliance Repairman												
639.381	Vending Machine Repairman												
710.281	Instrument Repairman												
700.281	Jeweler												
315.281	Watch Repairman												

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Name and Title of Person Completing Questionnaire

Date

Confidential Report

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SKILLED NEEDS SURVEY

Name of Business_____

Business Description (Product or Service)_____

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Please make an entry in each column for each job title listed below.

D.O.T. Code Number (Office use Only)	Job Title	Present Number of Employees		Current Number of Vacancies	Anticipated Employment (Total no. of workers)		Percent leaving employment due to death, retirement or promotion (per year)	In-Plant Training (Formal)			Check present supply of trained worker 1-short 2-adequate 3-surplus		
		Total Male	Total Female		Jan.1 1969	Jan.1 1971		Current No. of Trainees	No Completing Training By Jan.1 1969	No Completing Training By Jan.1 1971	1	2	3
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
785.261	Master Tailor												
785.281	Alteration Tailor												
787.782A	Sewing Machine Operator All-Around												
787.782B	Sewing Machine Operator Regular Equipment												
787.885	Sewing Machine Operator Automatic												
785.361	Dressmaker												
583.885	Steam Press Operator												
780.381	Furniture Upholsterer												
780.884A	Upholsterer, Assembly Line												
780.884B	Upholstery Cutter												
784.281	Milliner												
362.782	Dry-Cleaning Mach. Oper.												

AGRICULTURAL RELATED JOB DESCRIPTIONS

D.O.T. Code No.

525.8841 Meat Dresser - Butchers livestock, such as hogs, sheep and cattle, in private slaughter house or on customer's premises.

412.886 Poultry Technician - Inspects poultry farms to insure that growers comply with contract standards for feeding and housing birds and controlling disease.

520.8851 Chopping-Machine Operator - Tends machine that chops and mixes ground meat into emulsion for use in making such products as bologna and wieners.

525.387 Meat Grader - Examines animal carcasses to grade them in terms of sales value.

525.8842 Final Dressing Inspector - Inspects dressed animal carcasses for defects and cuts out defective portions following established procedure.

292.358 Salesman-Driver - Drives truck over established route to deliver, sell and display products or render services.

529.782 Dairy Processing Equipment Operator - Set up and operates continuous flow or vat-type equipment to process milk, cream, and other dairy products.

029.381 Laboratory Tester - Performs standardized tests to determine quality or quantity of physical or chemical properties in food products or to insure compliance with company and government quality standards.

022.168 Laboratory Supervisor - Supervises and coordinates activities or workers engaged in performing routine chemical tests required for quality control of process and product; special physical tests to determine operating efficiency of process equipment.

142.081 Floral Designer - Designs and fashions floral pieces and decorations with selects of natural and artificial flowers and foliage.

407.138 Greens Superintendent - Supervises and coordinates activities of workers engaged in constructing new areas and preserving golf course grounds.

409.181 Tree Surgeon - Prunes and treats ornamental and shade trees and shrubs in yards and parks to improve their appearance, health and value.

404.884 Tree Pruner - Cuts away dead and excess branches from fruit, nut and shade trees.

406.887 Nursery Worker - Plan..., cultivates and harvests trees, shrubs and ornamental flowering plants in nursery.

262.358 Salesman Grain & Feed - Sells grain and feed-mill products such as flour, feed, meal and cereals.

049.3842 Feed Research Aid - Feeds rations of experimental feeds to animals such as poultry, dogs and cows and compiles data on growth, productivity and health of animals.

520.885 Ag. Feed Mixing Specialist - Tends machine that mixes stock or poultry feed according to formula and transfers it to packing machine or storage area.

049.3841 Biological Aid - Aids research workers to carry out experiments in bacteriology, performing routine tests and experiments concerned with greenhouses, experiemental plots, hives of bees and experimental equipment.

905.883 Truck Driver, Heavy - Drives truck with capacity of more than three tons, to transport materials in liquid, packaged or bulk form to farm, railroad station or plant.

424.883 Sprayer - Sets up and operates equipment to dust tree crops, ground crops and livestock with liquid or powdered pesticides, fertilizers, herbicides, or hormones.

906.883 Liquid-Fertilizer Serviceman - Drives truck to deliver liquid fertilizer to field location and pumps fertilizer into tractor-drawn applicator tank.

276.358B Salesperson, General Hardware - Displays and sells hardware, such as electrical equipment, gardening tools and equipment, and paints to individuals.

168.287 Agricultural Commodity Grader - Inspects fresh fruits and vegetables, grains, nursery stock and other horticultural products, handled, stored, packed, shipped or sold.

624.281 Farm Equipment Mechanic - Maintains, repairs and overhauls farm machinery, equipment and vehicles, such as tractors, harvesters, pumps, tilling equipment; electrically powered or motor-driven equipment; on farms or in farm equipment repair shops.

624.282 Farm Equipment Mechanic Helper - Assists the farm equipment mechanic in repairing and overhauling machinery and mechanical equipment.

624.381 Farm Machinery Setup Man - Erects and assembles farm machinery for use in field. Uncrates components at freight station or dealer's warehouse. Assembles and adjusts machinery according to specifications.

810.782 Ag. Machinery Welder - Sets up and operates arc or gas welding machine which automatically welds together parts of broken metal for repair or alteration.

223.388 Ag. Machinery Parts Man - Receives, stores and issues equipment, material, supplies or tools, and compiles stock records in stockroom, warehouse, or storage yard.

276.158 Salesman Ag. Machinery - Sells machinery and machinery parts utilizing knowledge of operation and uses of machinery and how it is manufactured.

624.781 Assembly Repairman Ag. Machinery - Repairs assembly defects of agricultural equipment, such as tractors, hay balers, and combines, using handtools and power tools.

467.384 Artificial-Breeding Technician - Collects and packages bull semen for artificial insemination of cows.

AIRCRAFT MECHANICAL AND MAINTENANCE JOB DESCRIPTIONS

D.O.T. Code No.

621.281A Aircraft and Engine Mechanic - Services, repairs and overhauls aircraft and aircraft engines to insure airworthiness.

621.281B Airplane Inspector - Examines airframe, engines and operating equipment to insure that repairs are made according to specifications, and certifies airworthiness of aircraft. Must hold Airframe and Power Plant License, and Inspection Authorization, issued by Federal Aviation Agency.

621.381A Flight Test Shop Mechanic - Plans, lays out, develops, fabricates, repairs, overhauls and shop-tests special mechanical and electrical flight testing equipment and experimental parts and assemblies for aircraft, following drawings, sketches and written and verbal instructions.

621.281C Aircraft Engine Tester - Tests performance of new and overhauled turbojet, turboprop and cylinder type aircraft engines and interprets test data. Must be licensed by Federal Aviation Agency.

621.381B Mechanic, Flowmeter Test and Certification - Inspects and repair rocket test equipment, such as oxidizer and fuel pumps, valves, regulators and flow devices, according to specifications, using handtools, machines and precision measuring instruments.

621.281D Supercharger Mechanic - Repairs and tests aircraft engine superchargers, according to specifications and using machines, handtools and precision testing equipment. Maintains testing equipment.

621.281E Hydraulic Tester - Tests, adjusts and repairs airplane hydraulic units and systems following blueprints, schematic drawings or verbal or written instructions. May install hydraulic units and systems in airplanes and test units and systems after installation.

621.281F Carburetor Man - Overhauls and tests aircraft carburetors to insure operational readiness.

710.281 Instrument Man - Overhauls, repairs, modifies and tests aircraft instruments, using precision handtools and following blueprints, work orders and manufacturer's specifications.

823.281 Aircraft Radio Mechanic - Inspects, adjusts and repairs aircraft radio sets. Required to hold Radiotelephone Operator's License issued by the Federal Communications System.

912.887 Lineman - Services airplanes on the line of an airport, filling tanks with gasoline and oil, and engine radiators with water or other cooling agent when liquid-cooled engines are used. May load and unload food for in-flight meal service.

AUTOMOTIVE AND DIESEL JOB DESCRIPTIONS

D.O.T. Code No.

620.281A Automobile Mechanic - Repairs motor vehicles, performing such duties as disassembling and overhauling engines, transmissions, clutches, rear ends and other assemblies.

620.381 Automotive Tune-Up Mechanic - Performs minor repair and tune-up of motor vehicles.

620.281B Front End Alignment Man - Alines wheels, axles, frames, torsion bars and steering mechanisms of automotive vehicles.

620.281C Transmission Mechanic - Repairs and installs manual and automatic transmissions in automotive vehicles.

620.281D Brakeman, Automobile - Repairs and overhauls brake systems in automobiles, buses, trucks and other automotive vehicles.

620.281E Automobile Air Conditioning Mechanic - Installs and repairs automotive air conditioning units.

620.281F Automobile Maintenance Mechanic - Inspects, repairs and maintains functional parts of automotive equipment.

223.387 Automotive Parts Man - Purchases, stores and issues spare parts for automotive equipment. Keeps records of parts received and issued or sold and inventories parts periodically.

807.381 Automobile Body Repairman - Examines damaged automotive vehicles and estimates cost of repairs. Repairs or replaces damaged bodies and body parts.

845.781 Automobile Spray Painter - Removes old paint from automotive vehicle or damaged or repaired portion of vehicle and repaints with spray gun.

915.867 Automobile Service Station Attendant - Services automobiles, buses, trucks and other automotive vehicles with fuel, lubricants and accessories.

620.281G Tractor Mechanic - Diagnoses mechanical failures of and repairs tractors and tractor components according to manuals, factory specifications and knowledge of engine performances, using handtools, power tools and testing instruments.

625.281A Gasoline Engine Repairman (2- and 4-cycle) - Repairs fractional horsepower gasoline engines used to power boats, lawnmowers, brushsaws, garden tractors and similar machines, using handtools.

625.281B Diesel Mechanic - Diagnoses trouble, disassembles diesel engines and examines parts for defects and excessive wear. Reconditions, replaces, repairs and maintains diesel engines used to power machines, using handtools, precision-measuring instruments and metalworking tools.

620.281H Transmission Mechanic (Diesel) - Repairs and installs manual and automatic transmissions in trucks, buses and industrial equipment.

625.281C Fuel Injection Serviceman (Diesel) - Rebuilds, tests and calibrates fuel injection units as used on diesel engines, railroad locomotives, trucks, construction equipment, tractors and power plants.

862.381 Pipe Fitter, Diesel Engine - Installs oil, air, fuel and water lines on diesel engines, using blueprints and process documents to determine pipe size, location of connection and angles of bends.

904.883 Tractor-Trailer Truck Driver - Drives gasoline or diesel-powered tractor-trailer combination, usually over the road (long distances on highways), to transport and deliver goods, livestock or materials in liquid, loose or packaged form.

906.883 Light Truck Driver - Drives truck with capacity under three tons to transport materials in liquid or packaged form and personnel to and from specified destinations.

915.884 Tire Repairman - Repairs damaged tires of automobiles, buses, and trucks with the use of hydraulic jack or power hoist, water bath, rubber mallet, metal bar or mechanical tire changer.

CONSTRUCTION MAINTENANCE WITHIN INDUSTRY
JOB DESCRIPTIONS

D.O.T. CODE NO.	
160.288	Estimator - Prepares cost and work completion estimates for engineering contract bids. Computes cost estimates of raw materials, purchased equipment or subcontracted work and labor.
860.381	Carpenter - Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard, using carpenter's handtools and power tools, and conforming to local building codes.
860.131	Carpenter, Foreman - Supervises and coordinates activities of workers engaged in construction, installation and repair of wooden structures and fixtures.
864.781	Floor Layer - Applies blocks, strips or sheets of shock absorbing, sound-deadening or decorative covering to floors, walls and cabinets.
866.381	Roofer - Covers roofs with roofing materials, other than sheet metal, such as composition shingles or sheets, wood shingles or asphalt and gravel, to make them waterproof.
862.381A	Plumber - Assembles, installs and repairs pipes, fittings and fixtures of heating, water and drainage systems, according to specifications and plumbing codes.
862.381B	Pipe Fitter - Lays out, fabricates, assembles, installs and maintains piping and piping systems, fixtures and equipment for steam, hot water, heating, cooling lubricating, and industrial processing systems, on basis of knowledge of system operation and study of building plans or working drawings.
861.381	Bricklayer (Mason) - Lays building materials, such as brick, structural tile and concrete cinder, glass gypsum and terra cotta clock to construct or repair walls, partitions, arches, sewers and other structures.
824.281	Electrician - Plans layout and installs and repairs wiring, electrical fixtures, apparatus and control equipment.
869.381	House Repairman - Repairs and remodels houses and small buildings, according to blueprints or oral instructions. May hire workers to perform tasks for which he is not equipped or does not hold license so that construction or repairs will conform to local building regulations.
842.781	Plasterer - Applies coats of plaster to interior walls, ceilings and partitions of buildings to produce finished surface, according to blueprint, architect's drawings or oral instructions.
382.884	Janitor - Keeps business and industrial buildings in clean and orderly condition and tends furnace and boiler to provide heat and hot water.
741.884	Painter, Spray - Sprays surfaces of machines, manufactured products, or working area with protective or decorative materials, such as paint, enamel or lacquer, using spray gun.

CONSTRUCTION INDUSTRY JOB DESCRIPTIONS

D.O.T. Code No.

001.281 Draftsman, Architectural - Performs duties of draftsman by planning artistic architectural and structural features of any class of buildings and like structures.

003.281B Draftsman, Electrical - Performs duties of draftsman in preparing electrical equipment working drawings and wiring diagrams used by construction crews and repairmen who erect, install and repair electrical equipment and wiring in powerplants, industrial establishments, commercial or domestic buildings, or electrical distribution systems.

017.281 Draftsman, Map - Draws maps of cities, counties, states and other areas showing location and identity of roads, communities, commercial or industrial structures and installations, political boundaries and other features.

160.288 Estimator - Prepares cost and work completion estimates for engineering contract bids. Computes cost estimates of raw materials, purchased equipment or subcontracted work and labor.

860.131 Carpenter Foreman - Supervises and coordinates activities of workers engaged in construction, installation and repair of wooden structures and fixtures.

860.381 Carpenter - Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard, using carpenter's handtools and power tools, and conforming to local building codes.

864.781 Floor Layer - Applies blocks, strips or sheets of shock absorbind, sound-deadening or decorative covering to floors, walls and cabinets.

866.381 Roofer - Covers roofs with roofing materials, other than sheet metal, such as composition shingles or sheets, wood shingles or asphalt and gravel, to make them waterproof.

862.381A Plumber - Assembles, installs and repairs pipes, fittings and fixtures of heating, water and drainage systems, according to specifications and plumbing codes.

862.381B Pipe Fitter - Lays out, fabricates, assembles, installs and maintains piping and piping systems, fixtures and equipment for steam, hot water, heating, cooling lubricating, and industrial processing systems, on basis of knowledge of system operation and study of building plans or working drawings.

861.381 Bricklayer (Mason) - Lays building materials, such as brick, structural tile and concrete cinder, glass gypsum and terra cotta block to construct or repair walls, partitions, arches, sewers and other structures.

824.281 Electrician - Plans layout and installs and repairs wiring, electrical fixtures, apparatus and control equipment.

869.381 House Repairman - Repairs and remodels houses and small buildings, according to blueprints or oral instructions. May hire workers to perform tasks for which he is not equipped or does not hold license so that construction or repairs will conform to local building regulations.

842.781 Plasterer - Applies coats of plaster to interior walls, ceilings and partitions of buildings to produce finished surface, according to blueprint, architect's drawings or oral instructions.

859.883A Heavy Equipment Operator (Operating Engineer) - Operates several types of power construction equipment, such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, to excavate and grade earth, erect structural and reinforcing steel, and pour concrete.

850.883A Bulldozer Operator - Operates tractor equipped with concave blade attached across front to gouge out level, and distribute earth and to push trees and rocks from land for constructing roads and buildings or planting crops.

859.883B Dragline Operator - Operates power-driven crane equipped with dragline bucket, suspended from boom by cable that is dragged toward crane to excavate or move sand, gravel, clay, mud, coal or other materials.

850.883B Power Shovel Operator - Operates power driven machine equipped with moveable shovel, to excavate and move coal, dirt, rock, sand and other materials.

620.282B Heavy Equipment Mechanic - Analyzes malfunction and rebuilds, repairs and adjusts heavy construction equipment other than internal combustion engines, such as cranes, power shovels, scrapers, paving machines, motor graders, rock crushers, trench-digging machines, conveyors, and bulldozers.

620.282A Construction Equipment Mechanic - Maintains, repairs and rebuilds, to conform to factory specifications, construction equipment, such as internal combustion engines, lighting plants, pumps, air compressors, concrete vibrators and equipment to diagnose defects.

869.131 Concreting Foreman - Supervises and coordinates activities of work crews engaged in preparing and applying concrete for fabricating, covering and reinforcing structures, including buildings, bridges, highways and dams.

570.132 Concrete Batching and Mixing Plant Foreman - Supervises and coordinates activities of workers engaged in transporting and mixing ingredients to make concrete.

570.885 Concrete Mixer Operator - Tends mixing machine to mix sand, gravel, cement and water to make concrete.

852.883A Concrete Paver Operator - Operates machine to mix and pour concrete into forms for paving highways. May clean, adjust, grease and repair paver and attachments.

852.883B Concrete Paving Machine Operator - Operates concrete paving machine to spread and smooth freshly poured concrete surfaces for concrete roads and landing fields.

900.883 Concrete Mixing Truck Driver - Drives truck equipped with auxiliary concrete mixer. Dumps concrete into chute leading to form, and cleans truck after delivery.

821.381 Lineman - Erects wood poles and prefabricated light-duty metal towers, cable and related equipment to construct transmission and distribution powerlines used to conduct electrical energy between generating stations, substations and consumers.

869.884 Construction Worker - Performs any combination of duties on construction projects, usually working in utility capacity, by transferring from one task to another task where demands require worker with varied experience and ability to work without close supervision.

801.781 Structural-Steel Worker - Performs any combination of duties to raise, place and unite girders, colums, and other structural-steel members to form completed structures or structure frameworks, working as a member of a crew.

FOOD SERVICE JOB DESCRIPTIONS

D.O.T. Code No.	
313.168	Executive Chef - Plans meals for large hotel or restaurant, supervises and coordinates the work of chefs, cooks and other kitchen employees, seeing that food preparation is economical and technically correct.
313.131	Chef - Supervises, coordinates and participates in activities of cooks and other kitchen personnel engaged in preparing and cooking foods in hotel restaurants, cafeterias or other establishment.
526.781	Baker - Produces finished baked goods, such as bread, cake, cookies, pastries and pied from raw materials. Measures and mixes ingredients, forms dough, prepares fillings and decorates specialties with icings.
316.884	Meat Cutter (Butcher) - Cuts and trims meat to size for display or as ordered by customer. Cleans and cuts fish and poultry.
315.381	Cook - Prepares, seasons and cooks foodstuffs by appropriate methods. May be designated according to type of food prepared or meal served.
317.887	Cook's Helper - Assists workers engaged in preparing foods for hotels, restaurants or ready-to-serve packages by performing any combination of tasks.
352.868	Host - Greets guests arriving at country club, catered social function, restaurant or other gathering place. May plan menus and supervise activities of food service workers.
310.868	Hostess - Schedules dining reservations, welcomes patrons, seats them at tables or in lounge and insures quality and rapidity of facilities and service.
211.468	Cashier - Receives cash from customers or employees in payment for goods or services and records amount received.
311.878A	Waiter and Waitress - Set tables and serve meals according to established rules of etiquette and perform various duties incidental to the furnishing of satisfactory service to guests.
311.878B	Bus Boy - Cleans off tables, sets tables, serves ice water, replenishes supply of clean linens, silverware, glassware and dishes in dining room of a hotel, cafeteria or other eating establishment.
318.887	Kitchen Helper (Dishwasher) - Performs any combination of duties to maintain kitchen work areas and restaurant equipment and utensils in clean and orderly condition.
324.878	Bellhop - Serves hotel and motel guests by escorting incoming guests to rooms, assist them with luggage, and inspects guests rooms to insure that it is in order and supplies are adequate.

526.886 Bakery, Helper - Moves and distributes baking supplies and products in and around production area of bakery, using hand trucks, dollies, troughs and rack trucks.

290.877 Grocery Stock Clerk - Sets up displays on counters, shelves or in bins. Keeps one section of store stocked, inventoried and requests replenishment of stock.

D.O.T. Code No.	
143.382	Photographer - Photographs persons suspected or convicted of crimes for identification, photographs land and property for loan and appraisal reports.
162.118	Contract Specialist - Negotiates with private concerns to draw up procurement contracts for the federal government and private concerns.
168.368	Title Clerk - Interviews applicants for vehicle registration and titles and verifies information on applications. Informs applicants of data required for registration of certificate of title.
249.368	License Clerk - Issues licenses or permits to qualified applicants.
199.288	Traffic Technician - Conducts field studies to determine traffic volume, speed, effectiveness of signals, adequacy of lighting and other factors influencing traffic conditions.
205.388	Civil Service Clerk - Keeps records of selection and assignment of personnel in office that recruits workers from civil service register.
168.168	Building Inspector - Inspects buildings, issues permits and confers with contractors and property owners to enforce state and municipal building codes.
168.2872	Sanitary Inspector - Investigates public and private establishments, such as restaurants, hotels, homes, cafeterias and places of public gathering, to determine compliance with or violation of public sanitation laws and regulations.
168.268	License Inspector - Visits establishments licensed by local governments to ascertain that valid licenses and permits are displayed and that licensing standards are being upheld.
373.168	Fire Inspector - Inspects buildings to detect fire hazards and enforce local ordinance and state laws.
168.1682	Land-Use Technician - Investigates complaints of violations in municipal or regional land use and zoning regulations and reviews applications for building and use permits for conformity to regulations.
168.2871	Poultry Grader - Certifies grade of dressed and ready-to-cook poultry in processing plants according to Federal standards.
232.368	Post Office Clerk - Performs any combination of tasks in a post office to include selling postage, cards and savings certificates; sorting and handling letters and packages.
233.388	Mail Carrier - Sorts mail for delivery and delivers mail on established route.
382.884	Custodian - Maintains buildings, offices and classrooms in a clean and orderly condition, tends furnace and boiler to provide heat and hot water and keeps building in repair.

GOVERNMENT STATE AND LOCAL JOB DESCRIPTIONS

D.O.T. Code No.	
188.188	Assessor - Appraises real and personal property to determine its fair value and assesses taxes in accordance with prescribed schedules.
168.168	Building Inspector - Inspects buildings, issues permits and confers with contractors and property owners to enforce state and municipal building codes.
162.158	Purchasing Agent - Purchases machinery, equipment, tools, raw materials, parts, services, and supplies necessary for operation of an organization, such as a utility or government unit.
249.388	Town Clerk - Performs variety of clerical and administrative duties required by municipal government.
375.2681	Policeman - Patrols assigned beat to control traffic, prevent crime or disturbance of peace and arrest violators.
375.2682	Policewomen - Investigates cases of juvenile and moral delinquency and those requiring services of female police personnel.
373.884	Fireman - Controls and extinguishes fires, protects life and property and maintains equipment as employee of city or township.
377.868	Deputy Sheriff - Enforces laws and serves legal processes of courts: Drives vehicle or patrols on foot specified area to detect infractions of law.
729.281	Electric-Meter Repairman - Inspects, adjusts, and repairs electric meters used for recording electric current consumption.
824.381	Street-Light Serviceman - Maintains and repairs mercury-vapor, fluorescent, electric-arc, or incandescent street lights and traffic signals.
710.281	Water-Meter Repairman - Installs watermeters in residential buildings. Tests to determine cause of malfunctions and disassembles, cleans adjusts and repairs watermeters.
710.884	Parking-Meter Serviceman - Inspects, repairs and maintains parking meters on designated route.
954.782	Pump-Station Operator, Waterworks - Operates pumping equipment to transfer raw water to treatment plant, or distribute processed water to residential, commercial, and industrial establishment.
955.130	Senior-Sewage-Plant Operator - Supervises and coordinates activities of workers in power generating, grit removal pump and blower, sludge filtration and incineration departments of sewage disposal.
955.782	Sewage-Plant Operator - Purifies waste water from plant before it enters rivers, streams or city main.
955.7822	Incinerator Operator - Controls equipment to burn garbage, refuse and sludge cake in incinerator plant.

954.7821 Water Service Dispatcher - Dispatches service crews to repair water mains.

912.384 Airport Serviceman - Performs a combination of tasks dealing with care, maintenance and safety of the airport.

912.887 Lineman - Services airplanes on the line of an airport, filling tanks with gasoline and oil, and engine radiators with water or other cooling agent when liquid-cooled engines are used.

621.281A Aircraft and Engine Mechanic - Services, repairs and overhauls aircraft and aircraft engines to insure airworthiness.

249.368 Library Assistant - Compiles records, sorts and shelves books, and issues and receives library materials, such as books, films and phonograph records.

075.128 Nurse, Public Health - Renders nursing services concerned with public health, working in government or public health agencies, instructing laypersons or students in health education and disease prevention.

313.138 Cook Head, School Cafeteria - Supervises and coordinates activities of workers engaged in preparing, cooking and serving food. Plans menus and estimates daily or weekly needs of food supplies.

899.381 Maintenance Man - A person engaged in repairing and maintaining buildings, machinery, electrical and mechanical equipment and grounds and public parks.

382.884 Custodian - Maintains buildings, offices and classrooms in a clean and orderly condition, tends furnace and boiler to provide heat and hot water and keeps building in repair.

901.883 Equipment Operator - Operates large motorized equipment such as: street sweeper, and snow removal equipment.

905.883 Truck Driver, Heavy - Drives truck with capacity of more than three tons, to transport materials and supplies or to haul unuseable matter to a sanitary fill.

620.282 General Purpose Mechanic - Repairs and maintains trucks, buses and other vehicles by city, school district or state garages.

812.884 Welder Combination - Welds metal parts together, according to layouts, blueprints or work orders, using both gas welding or brazing and any combination of arc welding processes.

860.381 Carpenter - Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard, using carpenter's handtools and power tools.

862.381A Plumber - Assembles, installs and repairs pipes, fittings and fixtures of heating, water and drainage systems, according to specifications and plumbing codes.

824.281 Electrician - Plans layout and installs and repairs wiring, electrical fixtures, apparatus and control equipment.

HEALTH OCCUPATION JOB DESCRIPTIONS

D.O.T. Code No.

079.378A Nurse, Associate Degree - Two-year training. Usually perform nursing care measures, as well as medically delegated techniques, with a high degree of skill using principles of allied, social, physical and biological science.

079.378B Nurse, Licensed Practical - One-year training. Cares for patients of all ages: the less seriously ill and the convalescent, new mothers and their infants, sick children, the chronically ill and aged patients. They also assist professional registered nurses and doctors in caring for patients who are acutely ill.

355.878A Orderlies and Nurse's Aides - Perform duties requiring less nursing skill than those of professional or practical nurses, such as make beds, bathe patients, deliver messages, count and stack linens, escort patients to other parts of hospital, help with examinations or take care of hospital equipment. Work under the direction of the professional or practical nurse.

079.368 Medical Assistant - Performs duties under direction of a physician in examination and treatment of patients, such as scheduling appointments, preparing rooms for examination of patients, preparing patient for examination. May operate equipment, give injections or treatments and assist in the laboratory.

355.878B Attendant - Prepares and assists patients for treatment by physical therapist. Sets up and assembles such equipment as hydrotherapy tanks and vibrators.

078.381 Medical Laboratory Assistant - Performs medical duties in a hospital or medical laboratory test for urine, blood, animal parasites, infections, etc. Give giological skin tests, prepares vaccines, type-blood for transfusions and may engage in research.

201.3682 Medical Secretary - Prepares medical charts and reports for doctor or hospital personnel, utilizing knowledge of medical terminology. May prepare and send bills to patients and record appointments.

100.388 Medical Record Librarian - Compiles and maintains medical records of hospital and clinic patients. Compiles statistics such as reports on admissions, births, deaths, transfers and discharges. Releases medical information to staff and authorized governmental agencies, insurance companies, physicians, hospitals and medical information and research centers.

249.388 Medical Record Clerk - Classifies medical records of hospital patients and compiles statistics for use in reports and surveys.

079.378C Surgical Technician - Assists surgeon before and during surgery by helping him don cap, mask and gloves, placing equipment and supplies in operating room, maintain supply of specified fluids as plasma, blood, etc.; washing and sterilizing equipment; and handing instruments and supplies to the surgeon.

078.368A X-Ray Technician (Radiologic Technologist) - Positions patients under X-ray machines and administers drugs orally or as enemas. Applies reontgen rays and radioactive substances to patients for diagnostic and theraputic purposes.

079.128 Occupational Therapy Aide- Assists occupational therapist in administering medically oriented occupational program to assist in rehabilitating patients in hospitals and similar institutions. Instructs patients in manual and creative arts, games, crafts and other activities. Prepares and lays out work materials and supplies and assists in maintenance of equipment.

079.268 Inhalation Therapist - Sets up and operates various types of equipment to administer oxygen and other gases to patients. Makes out charge slips for inhalants, records cost of materials and equipment used and charges made to patients.

712.381 Dental Laboratory Technician - Prepares metal, vulcanite (hard rubber) or other composition plates from wax impressions taken by dentist. Constructs metal clamps, inlays and bridge work according to specifications. Develops X-ray pictures and keeps records.

078.368B Dental Hygienist - Performs dental prophylactic treatments and instructs groups and individuals in care of teeth and mouth. Removes calcium deposits, accretions and stains from teeth by scraping accumulation of tartar from teeth and beneath margins of gums. Charts conditions of decay and disease for diagnosis and treatment by dentist.

079.378D Dental Assistant - Receives patients, schedules appointments, collects fees for services, answers telephone, orders supplies and pays bills. Obtains patient's medical records, prepares patient for treatment and assists dentist in patient management. Sterilizes and maintains supply of instruments. May expose and process dental X-ray films.

713.381 Optician - Sets up and operates machines to grind eyeglass lenses to prescription specifications and assembles lenses in frames. Inspects lenses and determines specifications of broken lenses with power determining and optical centering instrument.

007.081 Optical Technician - Designs mechanical portion of precision optical instruments, draws sketch of mechanical parts, devises equipment for testing optical system. Reviews optical specifications to determine types of mounts, test lenses, tools and fixtures required and sequence of operations necessary for construction of optical system.

MACHINE AND INDUSTRIAL JOB DESCRIPTIONS

D.O.T. Code No.

600.280A Machinist - Sets up and operates machine tools, and fits and assembles parts to make or repair metal parts, mechanisms, tools or machines, applying knowledge of mechanics, shop mathematics, metal properties and layout machining procedures.

601.280 Tool and Die Maker - Analyzes variety of specifications, lays out metal stock, sets up and operates machine tools, and fits and assembles parts to make and repair metalworking dies, cutting tools, jigs, fixtures, gages and machinists' handtools, applying knowledge of tool and die designs and construction, shop mathematics, metal properties, and layout, machining and assembly procedures.

609.381 Inspector, Floor - Tests or examines machinery parts, materials and assemblies at assembly, inspection or machining stations to insure conformance to blueprint or other specifications. May be specified according to manufacturing process, such as forging, assembly, stamping or machining; or by type of product inspected.

601.281 Inspector, Gage - Inspects and adjusts gages, measuring instruments, and testing equipment for conformance to blueprint specifications.

609.684 Inspector, General - Inspects materials and products, such as connecting rods, sheet steel, piston rings, carburetors and thermostats, for conformance to specifications, using fixed or preset measuring instruments.

609.380A Engine Lathe Set-Up Operator - Sets up and operates engine lathes to perform machining operations, such as turning, boring, threading and facing on metallic or nonmetallic workpieces according to specifications, tooling instructions, standard charts and knowledge of machining procedures.

604.380 Turret Lathe Set-Up Operator - Sets up and operates turret lathes to perform series of machining operations, such as turning, boring, threading and facing, on metal workpieces, such as castings, forgings and weldments, according to specifications, tooling instructions, standard charts and knowledge of turning procedures.

605.885 Milling Machine Set-Up Operator - Tends one or more milling machines to mill surfaces of metal workpieces to specifications on production basis.

616.380B Set-Up Man (Job Setter) - Sets up various metal fabricating machines, such as brakes, shears, punch presses and bending and straightening machines to cut, bend and straighten metal as specified by layout, work-order, blueprints and templates.

616.380C Die Setter - Sets up machines common to sheet metal shop, such as forming, edging, crimping, slitting, riveting, spot-welding, automatic and multi-purpose machines to cut, bend, form and join together sheet metal.

603.280 Grinding Machine Operator - Sets up and operates grinding machines, such as surface and universal, carbide, drill and tool-and-cutter grinders, to sharpen cutting tools to specifications, using knowledge of abrasives and metal properties.

604.782 Screw Machine Set-Up Operator - Sets up and operates one or more single- or multiple-spindle lathe-type screw machines equipped with automatic indexing and feeding mechanisms to perform turning, boring, threading and facing operations on metal bar stock on production basis, following specifications and tooling instructions and applying knowledge of screw machine operations.

606.782 Drill Press Operator - Sets up and operates drilling machines, such as single- or multiple-spindle drill presses to drill, ream, countersink, spot-face or tap holes in metal or nonmetal workpieces to specifications on production basis.

518.782 Machine Molder - Operates molding machine to form sand molds used in production of metal castings.

518.381 Coremaker - Makes sand cores used in molds to form holes or hollows in metal castings.

638.281 Maintenance Mechanic - Repairs and maintains, in accordance with diagrams, sketches, operation manuals and manufacturer's specifications, machinery and mechanical equipment, using handtools, power tools and precision-measuring instruments.

600.381 Lay-Out Man - Lays out metal stock or workpieces, such as castings, plates or machine parts, to indicate location and dimensions of processing to be done, such as machining, welding or assembly, analyzing specifications and computing dimensions according to knowledge of product, subsequent processing, shop mathematics and layout procedures.

600.280B Patternmaker, Metal - Lays out, machines, fits and assembles castings and parts to make metal foundry patterns, core boxes, and match plates, using handtools and machine tools, and analyzing specifications according to knowledge of patternmaking methods.

693.281 Patternmaker, Metal, Bench - Fits, assembles and hand finishes castings and parts in making metal foundry patterns, using handtools and analyzing specifications according to knowledge of patternmaking methods.

804.281 Sheet Metal Worker - Fabricates, assembles, installs and repairs sheet metal products and equipment, such as control boxes, drainpipes, ventilators and furnace casings, according to job order or blueprints.

504.782 Heat Treater - Controls heat-treating furnaces and quenching equipment to alter physical and chemical properties of variety of metal objects by methods of controlled heating and cooling, such as hardening, tempering, annealing, case-hardening and normalizing.

741.884 Painter, Spray - Sprays surfaces of machines, manufactured products or working area with protective or decorative materials, such as paint, enamel, or lacquer, using spray gun.

811.884 Welder, Gas - Welds metal parts together, as specified by layout, welding diagram or work order, using gas welding equipment.

810.884A Welder, Arc - Welds metal parts together, as specified by layout, diagram, work order, or oral instructions, using electric arc welding equipment.

812.887 Welder, Combination - Welds metal parts together, according to layouts, blueprints or work orders, using both gas welding or brazine and any combination of arc welding processes. Performs related tasks, such as flame cutting and grinding.

810.884B Welder, Heliarc (Gas-Shielded Arc) - Welds metal, using equipment which introduces shield of inert or noncombustible gas, such as helium, argon, carbon dioxide or nitrogen, around electric arc between electrode and workpiece to prevent oxidation.

810.782 Welding Machine Operator, Arc - Sets up and operates arc welding machine which automatically welds together parts of fabricated metal products, as specified by blueprints, layouts and operating charts.

950.782 Stationary Engineer - Operates and maintains stationary engines and mechanical equipment, such as steam engines, air compressors, generators, motors, turbines and steam boilers, to provide utilities, such as light, heat or power, for buildings and industrial processes.

011.281 Metallurgist, Assistant (Technician) - Examines and tests metal samples to determine their physical properties, under direction of metallurgist. Tests samples in pressure devices, hot-acid baths and other apparatus to determine strength, hardness, elasticity, toughness or other properties of metal.

007.281 Draftsman, Mechanical - Performs duties of draftsman specializing in drafting detailed working drawings of machinery and mechanical devices, indicating dimensions and tolerances, fasteners and joining requirements, and other engineering data.

003.181A Electrical Technician - Applies electrical theory and related subjects to test and modify development or operational electrical machinery and electri-control equipment and circuitry in industrial or commercial plants and laboratories.

710.281 Electro-Mechanical Technician - Fabricates, tests, analyzes and adjusts precision electro-mechanical instruments, such as temperature probes and aerodynamic probes, following blueprints and sketches, using hand-tools, metalworking machines, and measuring and testing instruments.

007.181 Mechanical Engineering Technician - Applies theory and principles of mechanical engineering to develop and test machinery and equipment under direction of engineering staff and physical scientists.

022.281 Chemical Laboratory Technician - Conducts chemical and physical laboratory tests and makes qualitative and quantitative analyses of materials and purposes such as development of new products, materials, and processing methods, and for maintenance of health and safety standards, working under the direction of a chemist.

003.281A Instrumentation Technician - Devises, sets up and operates electronic instrumentation and related electromechanical or electrohydraulic apparatus involved in operational and environmental testing of mechanical, structural, or electrical equipment, and translates test data for subsequent use by engineering personnel in making engineering design and evaluation decisions.

003.181B Electronic Technician - Applies electronic theory, principles of electrical circuits, electrical testing procedures, engineering mathematics, physics, and related subjects to layout, build, test, troubleshoot, repair and modify developmental and production electronic equipment, such as computers, missile-control instrumentation and machine tool numerical controls.

001.281 Draftsman, Architectural - Performs duties of draftsman by planning artistic architectural and structural features of any class of buildings and like structures.

003.281B Draftsman, Electrical - Performs duties of draftsman in preparing electrical equipment working drawings and wiring diagrams used by construction crews and repairmen who erect, install and repair electrical equipment and wiring in powerplants, industrial establishments, commercial or domestic buildings, or electrical distribution systems.

003.281C Draftsman, Electronic - Drafts wiring diagrams, schematics and layout drawings used in manufacture, assembly, installation and repair of electronic equipment, such as television cameras, radio transmitters and receivers, audioamplifiers, computers and radiation detectors.

017.281 Draftsman, Map - Draws maps of cities, counties, states and other areas showing location and identity of roads, communities, commercial or industrial structures and installations, political boundaries and other features.

617.280 Press Operator Sheet Metal - Sets up and operates powerpress to bend, form and straighten metal plates, structural shapes, forgings, and weldments as specified by blueprints, layout and templates.

OFFICE JOB DESCRIPTIONS

D.O.T. Code No.

201.3681 Secretary - Performs general office work in relieving executives of minor executive and clerical duties. Takes dictation and transcribes material to the typewritten page.

202.388 Stenographer - Takes dictation in shorthand of correspondence, reports and other matter and transcribes dictated material to the typewritten page. May perform a variety of related clerical duties.

208.588 Transcribing Machine Operator (Dictaphone) - Transcribes the message reproduced in sound from the wax or tape record on a transcribing machine.

203.588 Typist and Clerk Typist - Does general clerical work; requires the use of typewriter in the accomplishment of a majority of the duties. Typewrites letters, reports and other matter from rough draft or corrected copy. Files records and reports. May perform one or a combination of clerical duties as assigned.

237.368 Receptionist - Receives clients or customers coming into establishment. Ascertains their wants and directs them accordingly.

235.862 Telephone Operator (PBX Operator) - Operates telephone switchboard (cord or cordless) to relay to the different phones in the establishment incoming and inter-office calls, and makes connections with outside lines for outgoing calls.

209.588 General Clerk - Performs combination of clerical tasks not requiring knowledge of systems and procedures: Proofreads; writes or types bills, statements, receipts or checks; sorts and files records; addresses and stuffs envelopes; answers telephone; stamps, sorts and delivers mail; operates office duplicating equipment.

222.387 Shipping and Receiving Clerk - Prepares merchandise for shipping or delivery. Selects goods ordered; wraps, packs or crates for shipping or delivery. Addresses parcel or crate, weighs article and attaches postage or bill of lading. May also receive goods shipped to an establishment, unpack and verify or direct receiving checker in verifying the correctness of shipments against bill of lading, invoices or other records.

223.3871 Stock Clerk - Receives, stores and issues equipment, material, merchandise or tools in a stock room or storeroom.

207.7821 Duplicating Machine Operator - Reproduces duplicate copies of typewritten or handwritten matter using a machine which reproduces the master copy onto sheets of duplicate paper.

208.885 Collator Operator - Tends and adjusts controls of machines that assembles pages of printed material in numerical sequence. Places pages to be assembled in holding tray.

214.488A Accounting Clerks - May perform a number of tasks from beginning routine tasks such as posting items by hand to ledgers to the more experienced position which involves more varied assignments and greater responsibility, such as preparing summary reports as well as machine posting, etc.

214.488B Billing Machine Operator - Prepares statements, bills and invoices to be sent to customers using billing machines. May make computations on separate adding and calculating machines.

210.388 Bookkeeper - Keeps complete and systematic set of records of business transactions of establishment. Duties may vary from simple record keeping to keeping a complete set of books including financial reports, depending on size of business.

215.388 Bookkeeping Machine Operator - Keeps set of records of business transactions using bookkeeping machine.

216.488 Calculating Machine Operator - Presses proper keys on keyboard and manipulates certain levers to operate a machine that automatically performs the basic arithmetic computations of adding, subtracting, multiplying and dividing.

216.388 Statistical Clerks and Compilers - Compiles regular and special reports for the use of the management and as a basis for statistical studies using the regular bookkeeping and accounting records as a source of information.

DATA PROCESSING JOB DESCRIPTIONS

D.O.T. Code No.

213.382 Digital Computer Operator - Operates electronic digital computer to process business, scientific, engineering or other data, according to operating instructions.

020.188 Programmer - Converts symbolic statement of problems to detailed logical flow charts for coding into computer language and solution by means of automatic data processing equipment. Analyzes all or part of workflow chart or diagram, confers with supervisor and representatives of departments affected by program, writes detailed flow charts, and may convey flow chart to language processable by computer. Observes or runs tests of coded program on computer, corrects program errors. Analyzes and rewrites programs to increase operating efficiencies or adapt to new requirements.

012.168 Systems Analyst - Analyzes business problems, such as development of integrated production, inventory control and cost analysis system, to refine its formulation and convert it to programmable form for application to electronic data processing system.

213.582 Keypunch Operators - Operates machine similar to a typewriter recording accounting and statistical data on tabulating cards by punching a series of holes.

213.782 Tabulating Machine Operator - Operates machine that processes data from tabulating cards into printed records. May tend machines that sort, interpret, reproduce and collate, and may maintain files of punched cards.

239.388 Data Processing Maintenance Service - Receives orders from plant departments for maintenance service, such as repair work or machine adjustments, and relays requests to appropriate maintenance division. Keeps records of services rendered and requisitions supplies for maintenance and clerical workers.

213.138 Supervisor, Machine Room - Supervises and coordinates activities of workers engaged in keeping records and tabulating reports, using punchcards and office machines, such as tabulating, keypunch and sorting machines.

PRINTING, PUBLISHING AND ALLIED INDUSTRIES
JOB DESCRIPTIONS

D.O.T. Code No.

659.130 Foreman, Printing Shop - Supervises and coordinates activities of workers engaged in laying out copy, setting type, operating presses and assembling and stitching pamphlets, leaflets and books.

651.782A Offset Pressman - Makes ready and operates offset printing press to print single and multicolor copy from lithographic plates.

207.7822 Multilith Operator - Operates offset duplicating machine to reproduce single or multicolor copies of charts, schedules, bulletins and related matter, according to oral instructions or layout and stock specifications on job order.

651.782B Platen Pressman - Prepares and operates platen type printing press to produce printed material.

650.582 Linotype Operator - Operates machine to cast complete lines of type from type metal and deposit them in galley in composed form for printing.

973.381A Compositor (Typographer) - Sets type by hand and machine and assembles type and cuts in a galley, for printing articles, headings and other printed matter, determining type size, style and compositional pattern from work order.

979.884 Silk Screen Printer - Prints lettering and designs on objects using silk screen printing machine.

973.381B Job Printer - Sets copy according to copy and operates cylinder or automatic platen press to print complete job order.

971.381 Photoengraver - Photographs copy, develops negatives and prepares photosensitized metal plates, such as copper, zinc, aluminum and magnesium for use in printing. Modifies and repairs finished plates, using engraver's handtools, etching brush and acid.

972.382 Photographer (Lithographic) - Sets up and operates camera to photograph illustrations and printed material to produce film or glass negatives, or reversed negatives used in the preparation of lithographic printing plates.

143.062 Photographer (News) - Photographs news events or people for use in illustrating news stories and articles. Travels to assigned location and takes pictures, using camera.

653.782 Folding Machine Operator - Operates machine that automatically folds and slits printed sheets into signatures for binding.

627.281 Linotype Machinist - Adjusts and repairs linotype machines and related equipment, according to maintenance schedule, diagnosis of machine malfunctioning and manufacturer's service manuals.

977.884 Bookbinder - Binds covers to books or pamphlets and performs book finishing operations, determining production procedures from job order.

142.081 Commercial Artist - Draws and paints illustrations for advertisements, books, magazines, posters, billboards, and catalogs.

699.782 Cutter Operator - Operates cutting machine equipped with rotary or reciprocating blades to cut rolls of material such as paper, paperboard, cellophane or plastic, into sheets, according to specifications.

SALES OCCUPATIONS JOB DESCRIPTIONS

D.O.T. Code No.

254.258 Sales Representative - Contacts representatives of the government, businesses and social groups to solicit business for a particular product or business.

290.478 Sales Clerk - Receives payment for merchandise, such as bakery goods, magazines, groceries, books and tobacco selected by customer.

290.468 Sales Attendant - Aids customer in locating merchandise in self-service store. May mark or ticket merchandise and keep merchandise in order.

SALESMAN - Sells merchandise to business or industrial establishments, or to individuals, utilizing detailed knowledge of specific characteristics, of merchandise, at sales office, store, showrooms or customer's home or place of business.

289.358A Salesman, General - Displays and sells variety of commodities to customers at sales office or customer's place of business or home.

263.358A Salesman, Footwear - Sells footwear, such as shoes, boots, overshoes and slippers to business establishments.

278.358A Salesman, Gas or Electric Appliances - Demonstrates and sells gas or electric appliances, such as refrigerators, ranges or lighting equipment, on display floor or by visiting customers at home.

276.358A Salesman, Hardware Supplies - Sells hardware supplies, such as plumbing and electrical supplies, power tools and handtools, paints and varnishes, plate glass and builder's hardware.

263.358B Salesman, Men's and Boys' Clothing - Sells men's and boys' clothing, such as suits, coats, sports jackets and slacks, utilizing knowledge of garment construction, fabrics and styles.

278.358B Salesman, Radio and Television Parts - Sells radio, television and other electronics parts to establishments, such as appliance stores, dealers, and repair shops, or electronics and aircraft manufacturing firms.

263.358C Salesman, Women's and Girls' Apparel - Sells women's and girls' apparel, such as coats, dresses, lingerie and accessories, utilizing knowledge of fabrics, style and prices.

SALESPERSON - Displays, describes and sells to individuals merchandise, such as hardware, furniture and garments, utilizing general knowledge of the characteristics, quality and merit of items sold.

289.458 Salesperson, General - Sells variety of commodities in sales establishment.

274.358A Salesperson, Dry Goods - Sales personnel who works in general merchandise store, selling such articles as wearing apparel, accessories, notions, bedding and yardage.

274.358B Salesperson, Furniture - Sells furniture, beds and mattresses in department stores and furniture stores.

276.358B Salesperson, General Hardware - Displays and sells hardware, such as builder's hardware, electrical equipment, gardening tools and equipment, household hardware, paints, plumbing supplies and woodworking equipment, to individuals.

263.458A Salesperson, Men's and Boys' Clothing - Sells men's and boys' outer garments, such as suits, trousers and coats, to individuals.

289.358B Salesperson, Parts - Sells spare and replaceable parts and equipment from behind counter in agency, repair shop or parts store.

278.358C Salesperson, Television and Appliances - Sells radios, television sets and other household appliances to customers.

263.458B Salesperson, Women's and Girls' Apparel - Sells women's and girls' clothing, such as coats, suits, formal gowns and dresses, to individual customers.

SERVICE INDUSTRY

D.O.T. Code No.

637.281C Refrigeration Mechanic - Installs and repairs industrial and commercial refrigerating and cooling systems according to blueprints and engineering specifications, using knowledge of refrigeration, structural layout and function and design of components.

637.281A Air-Conditioning Mechanic Commercial - Installs, services, and repairs commercial air-conditioning units, usually rated in excess of 100 tons cooling capacity, in department stores, office buildings and other large commercial establishments, utilizing knowledge of refrigeration theory, pipefitting and structural layout: Mounts compressor and condenser units on platform or floor, using handtools, following blueprints or engineering specifications.

637.281B Air-Conditioning Mechanic, Domestic - Services and repairs domestic air-conditioning units, usually ranging from ½ to 2 tons capacity, in private residences and small business establishments: Examines unit visually for defective parts, or determines cause of malfunction by listening to machine in operation, utilizing knowledge of mechanical, electrical, and refrigeration theory.

869.281 Furnace Installer and Repairman, Hot Air - Installs and repairs hot-air furnaces, stoves and similar equipment in accordance with diagrams and other specifications, using handtools and pipe-threading tools.

633.281 Office Machine Serviceman - Repairs and services office machines, such as adding, accounting and calculating machines, and typewriters, using handtools, power tools, micrometers and welding equipment.

720.281 Television and Radio Service and Repairman - Repairs and adjusts radios and television receivers, using handtools and electronic testing instruments. May install television sets.

828.281 Electronics Mechanic - Repairs electronic equipment, such as computers, industrial controls, radar systems, telemetering and missile control systems, transmitters, antennas and servomechanisms, following blueprints and manufacturers' specifications, using handtools and test instruments.

721.281 Electric Motor Repairman - Repairs electric motors, generators and accessory equipment, such as starting devices and switches, using handtools, power tools, precision gages and electrical test instruments.

723.884 Electrical Appliance Repairman - Repairs portable, household electrical appliances, such as fans, heaters, vacuum cleaners, toasters and flatirons.

639.381 Vending Machine Repairman - Installs and repairs vending machines, using handtools and power tools.

710.281 Instrument Repairman - Installs, repairs, maintains and adjusts indicating, recording, telemetering and controlling instruments used to measure and control variables, such as pressure, flow, temperature, motion, force and chemical composition, using hand-tools and precision instruments.

700.281 Jeweler - Fabricates and repairs jewelry articles, such as rings, brooches, pendants, bracelets and lockets.

715.281 Watch Repairman - Repairs, adjusts and cleans stop watches, dial indicators and die heads, using watchmakers' tools and jewelers' lathes according to written and oral instructions.

TEXTILE MILL JOB DESCRIPTIONS

D.O.T. Code No.

785.261 Master Tailor - Designs and makes tailored garments, such as suits, topcoats, overcoats and other dress clothing, applying principles of garment design, construction and styling.

785.281 Alteration Tailor - Alters clothing to fit individual customers or repairs defective garments, following alteration or repair tags or marks on garments.

787.782A Sewing Machine Operator, All Around - Operates various sewing machines to join, gather, hem, reinforce or decorate product, such as garments, upholstery, awnings or textile bags, and tends machines that perform specific functions, such as cutting out and sewing buttonholes or attaching snap fasteners to fabrics.

787.782B Sewing Machine Operator, Regular Equipment - Operates single- or multiple-needle sewing machines to join parts in the manufacture of such products as awnings, carpets, gloves, hats, textile bags and upholstery.

787.885 Sewing Machine Operator, Automatic - Tends one or more sewing machines that automatically seam continuous lengths of cloth, such as folded cloth, to form tubing, or automatically perform other continuous sewing functions, such as hemming, quilting or tufting.

785.361 Dressmaker - Makes women's garments, such as dresses, coats and suits, according to customer specifications and measurements.

583.885 Steam Press Operator - Tends machine that presses cloth to remove wrinkles by passing cloth between roll and steam-heated jacket that partially encloses roll.

780.381 Furniture Upholsterer - Repairs and rebuilds upholstered furniture, using handtools and knowledge of fabrics and upholstery methods.

780.884A Upholsterer, Assembly Line - Upholsters one section of sofa, chair or furniture frames, specializing in one operation on assembly line.

780.884B Upholstery Cutter - Cuts cloth, leather or plastic into upholstery parts such as arm rest, back and cushion covers.

784.281 Milliner - Fabricates hats for individual customer or for store's stock. Reproduces hats in various colors and materials. Alters stock hats to customer's wishes by changing ornaments and veiling.

362.782 Dry-Cleaning - Machine Operator - Operates dry cleaning machine to clean garments, drapes, and other materials that cannot be washed in water, utilizing knowledge of cleaning processes, fabrics and colors to determine procedure.

APPENDIX B. FOLLOW-UP LETTER

IOWA WESTERN COMMUNITY COLLEGE

321 Sixteenth Avenue
COUNCIL BLUFFS, IOWA 51501
TELEPHONE (712) 328-3831

ROBERT D. LOOFT, *Superintendent*

January 17, 1968

Dear Personnel Director:

About two weeks ago you received a questionnaire from Iowa Western Community College of Council Bluffs, Iowa requesting information about the number of skilled, semi-skilled and technician level workers employed in your firm.

As of this date we have not received your completed questionnaire.

Since we are depending heavily on the results of this survey to help guide us in the development of educational programs we are again requesting your cooperation in completing our questionnaire and returning it to us.

If you have not mailed the completed questionnaire prior to receipt of this letter it would be greatly appreciated if you would do so before January 24, 1968. Thank you for your co-operation in this matter.

Sincerely,

Robert D. Looft, Superintendent
IOWA WESTERN COMMUNITY COLLEGE

RDL/ht
Enc.

APPENDIX C. STANDARD INDUSTRIAL CLASSIFICATION, BY NUMBERS, RECEIVING SPECIFIC QUESTIONNAIRES

STANDARD INDUSTRIAL CLASSIFICATION,

BY NUMBERS, RECEIVING SPECIFIC QUESTIONNAIRES

Agricultural Related Occupations: 019, 071, 072, 073, 201-202, 204, 422, 504-505, 525, 545, 549, 596

Aircraft Mechanical and Maintenance Occupations and Office Occupations: 451-452, 458

Automotive and Diesel and Office Occupations: 411-413, 421-423, 551-559, 751-754, 242-244, 249

Construction Occupations and Office Occupations: 111, 121, 142, 144, 151, 161-162, 171-179, 253-254, 266, 295, 325, 327, 481, 491-492, 521-524, 891

Food Service Occupations and Office Occupations: 205, 209, 541-543, 546, 581, 701-702, 783, 793-794

Governmental State and Federal Agencies: 910-919, 925, 926-929

Governmental State and Local Agencies: 920-924, 930-939

Health Occupations and Office Occupations: 283, 723-724, 729, 801-802, 804, 806-807, 809

Manufacturing and Industrial Occupations, Construction Maintenance within Industry Occupations, Office Occupations and Data Processing Occupations: 251, 259, 281, 284-285, 287, 289, 301, 306-307, 328-329, 332, 336, 339, 341-349, 352-354, 356, 358-359, 362, 365-367, 369, 371-373, 375, 384-385, 394-396, 398-399

Office and Data Processing Occupations: 203, 207, 208-209, 306-307, 415, 472, 474, 495, 601-602, 605, 612-615, 621-623, 631-633, 635-636, 639, 641, 651, 653-655, 661, 721, 734-736, 739, 769, 781, 791-793, 811, 821-824, 829, 841, 861-869, 892-893

Publishing, Printing and Allied Industry Occupations and Office Occupations: 264-265, 271-279, 289, 731-735

Sales Occupations, Service Occupations and Office Occupations: 483, 501-503, 506-509, 522-523, 531-535, 539, 543-545, 561-566, 571-573, 591, 594-595, 597-599, 653, 762-763

Textile Mill Occupations, Sales Occupations, Service Occupations, and Office Occupations: 229, 232, 238-239, 567, 721-722, 725, 729, 764

APPENDIX D. LETTERS TO LOCAL CHAMBERS OF COMMERCE AND CITY CLERKS

IOWA WESTERN COMMUNITY COLLEGE
310 First National Bank Building
Council Bluffs, Iowa 51501

ROBERT D. LOOFT, *Superintendent*

Telephone 712 328-3153

Dear Chamber Secretary:

During the next few months, the staff of Iowa Western Community College (Area XIII) is going to conduct a survey in the following seven counties: Audubon, Cass, Fremont, Harrison, Mills, Page, Pottawattamie, Shelby and that part of Douglas and Sarpy in Nebraska containing metropolitan Omaha.

We are constantly faced at present with the problem of not having sufficient information from which training programs can be established. Because of this situation and the need to justify future training programs, we would like to survey the firms in your community to determine training needs.

This survey will be directed toward all business and industrial firms in the area who employ four or more persons. Through this means, we hope to establish the number of skilled, semi-skilled and technician level workers needed in this area.

Our staff seeks your assistance in this project. We feel it will aid us in curriculum development as well as provide people trained in the skills needed in your community.

Sincerely,

Warren R. Morrow

Warren R. Morrow, Director
Student Personnel Services
IOWA WESTERN COMMUNITY COLLEGE

IOWA WESTERN COMMUNITY COLLEGE
321 SIXTEENTH AVENUE
COUNCIL BLUFFS, IOWA 51501
Telephone (712) 328-3153

Because of your responsive position in the local governmental structure, we seek your assistance in conducting a survey of local governmental agencies. Would you please record the number of people of each full time job title indicated by the questionnaire?

Please survey the following departments in your city: mayor, police, fire, water, sanitation, park and assessor. Please underline the offices which were contacted and return the copy of our letter with the complete questionnaire.

Sincerely,

Warren R. Morrow

Warren R. Morrow, Director
Student Personnel Services

WRM/bbs
Encl.

APPENDIX E. COUNTIES AND CITIES IN IOWA WESTERN COMMUNITY COLLEGE DISTRICT AREA XIII CODED BY COUNTY AND CITY FOR KEY PUNCHING

COUNTIES AND CITIES* IN IOWA WESTERN COMMUNITY COLLEGE DISTRICT AREA XIII CODED BY COUNTY AND CITY FOR KEY PUNCHING

1. Omaha, Nebraska (01)

2. Fremont
   - 10 Hamburg
   - 19 Sidney
   - 20 Tabor
   - 31 Farragut
   - 38 Riverton
   - 51 Thurman
   - 52 Imogene
   - 55 Randolph
   - 65 Percival
   - 72 East Nebraska City

3. Cass
   - 03 Atlantic
   - 16 Anita
   - 17 Griswold
   - 30 Lewis
   - 33 Massena
   - 36 Clumberland
   - 60 Marne
   - 61 Wiota

4. Harrison
   - 08 Missouri Valley
   - 11 Logan
   - 14 Woodbine
   - 15 Dunlap
   - 34 Mondamin
   - 42 Pisgah
   - 44 Persia
   - 46 Little Sioux
   - 50 Modale
   - 58 Magnolia

5. Mills
   - 06 Glenwood
   - 18 Malvern
   - 26 Pacific Junction
   - 28 Emerson
   - 49 Silver City
   - 53 Hastings

6. Page
   - 04 Shenandoah
   - 05 Clarinda
   - 23 Essex
   - 29 New Market
   - 41 Coin
   - 47 College Springs
   - 59 Shambaugh
   - 62 Braddyville
   - 63 Yorktown
   - 64 Northboro
   - 67 Hepburn
   - 71 Blanehard

7. Pottawattamie
   - 02 Council Bluffs
   - 12 Avoca
   - 13 Oakland
   - 21 Neola
   - 22 Walnut
   - 25 Carson
   - 32 Treynor
   - 40 Minden
   - 43 Underwood
   - 45 Crescent
   - 48 Macedonia
   - 56 Hancock
   - 68 Westphalia
   - 70 Mineola

8. Shelby
   - 07 Harlan
   - 24 Elk Horn
   - 27 Shelby
   - 35 Earling
   - 37 Irwin
   - 39 Defiance
   - 54 Panama
   - 57 Portsmouth
   - 66 Tennant
   - 68 Westphalia
   - 69 Kirkman

*Cities are numbered according to population, number one being largest

APPENDIX F. SKILLED NEEDS SURVEY LIST OF FIRMS VISITED BY GRADUATE STUDENT INTERVIEW TEAM

SKILLED NEEDS SURVEY LIST OF FIRMS VISITED BY

GRADUATE STUDENT INTERVIEW TEAM

Airlite Plastics Co.
P. O. Box 649
Omaha, Nebraska 68101

Alamito Dairy Co.
2601 Leavenworth St.
Omaha, Nebraska 68105

Allied Chemical Corp.
Agricultural Division
P. O. Box 354
Omaha, Nebraska 68107

Am. Smelting and Refin.
5th and Dodge St.
Omaha, Nebraska 68102

Bemis Company, Inc.
614 So. 11th St.
Omaha, Nebraska 68102

Blackstone Corp.
Indian Hills Inn
8501 West Dodge Road
Omaha, Nebraska

Blue Star Foods Inc.
1023 4th
Council Bluffs, Iowa

A. Borchman Sons Co. Inc.
4101 Grant St.
Omaha, Nebraska 68111

Bozell and Jacobs Inc.
Kiewit Plaza
Omaha, Nebraska 68131

J. L. Brandeis and Sons
16th and Douglas Sts.
Omaha, Nebraska 681201

Builders Supply Co.
4039 South 72nd St.
Omaha, Nebraska 68127

Byron Reed Co., Inc.
200 Farnam Building
Omaha, Nebraska 68102

Calandra Camera Co.
116 North 42nd St.
Omaha, Nebraska 68131

Central Natl. Ins. Co.
700 So. 72nd Sts.
Omaha, Nebraska 68114

Cent. Sts. Health & Life
504 South 18th St.
Omaha, Nebraska 68102

Checker Cab Company
2123 St. Mary's
Omaha, Nebraska 68102

Personnel Director
Childrens Mem. Hospital
502 South 44th
Omaha, Nebraska

SAC 3902nd Air Base Wing
Offutt Air Force Base
Nebraska 68112

Carkson Hospital
Dewey at 44th
Omaha, Nebraska

Commercial Optical Inc.
1323 Jackson
Omaha, Nebraska 68102

Continent Egg Corp.
Malvern, Iowa 51551

Continental Can Co.
4133 South 72nd St.
Omaha, Nebraska 68127

Supt. Robert D. Benton
Council Bluffs Comm. Schools
Council Bluffs, Iowa 51501

Crown Products Co.
Ralston, Nebraska 68127

Leo A. Daly Company
8600 Indian Hills Dr.
Omaha, Nebraska 68114

Doctor's Hospital
501 Park Avenue
Omaha, Nebraska

Douglas County Hospital
4102 Woolworth
Omaha, Nebraska

Eaton Metal Products
13th and Willis
Omaha, Nebraska 68101

Echo Ready-Mix
Atlantic, Iowa 50022

Jennie Edmundson Hospital
933 E. Pierce
Council Bluffs, Iowa 51501

Employers Ind. Ser. Inc.
313 South 11th St.
Omaha, Nebraska 68102

Epsen Litho. Co.
2000 California St.
Omaha, Nebraska 68102

Evans Model Laundry
11th and Douglas Sts.
Omaha, Nebraska 68102

Fairmont Foods Co.
3201 Farnam Street
Omaha, Nebraska 68101

Father Flanagan Boys
Home Mailing Division
408 South 18th St.
Omaha, Nebraska 68102

Federal Reserve Bank of KC
16th and Dodge Sts.
Omaha, Nebraska 68102

First Nat. Bank of Omaha
16th and Farnam Sts.
Omaha, Nebraska 68101

Floor Brite Inc.
4106 Commercial Ave.
Omaha, Nebraska 68110

Frito-Lay, Inc.
3930 West Broadway
Council Bluffs, Iowa

Gate City Steel, Inc.
P. O. Box 914
Omaha, Nebraska 68101

General Appl. Mfg.
P. O. Box 429
Omaha, Nebraska 68101

General Woodworking
105 South 31st St.
Council Bluffs, Iowa

Giant Manufacturing Co.
1126 South 6th
Council Bluffs, Iowa

Goodrich Dairy Inc.
608 N. Saddle Creek
Omaha, Nebraska 68132

Griffin Pipe Products
2601 9th Ave.
Council Bluffs, Iowa

Guarantee Mut. Life
8721 Indian Hills Dr.
Omaha, Nebraska 68114

J. J. Hanighen Co.
4500 So. 76th St.
Omaha, Nebraska 68127

Hayden House, Inc.
Eppley Airfield
Omaha, Nebraska 68110

Henningson Durham
3555 Farnam Street
Omaha, Nebraska 68131

Herzbergs, Inc.
1519 Douglas St.
Omaha, Nebraska 68102

Immanuel Hospital
36th and Meredith
Omaha, Nebraska

Imperial Casualty
18th Floor WOW Bldg.
Omaha, Nebraska 68102

Inland Mfg. Co., Inc.
1108 Jackson Street
Omaha, Nebraska 68102

John Deere Company
912 Howard St.
Omaha, Nebraska 68102

Kawa Company
4702 South 27th St.
Omaha, Nebraska 68107

Kellogg Company
9601 F Street
Omaha, Nebraska 68127

Kimball Laundry Company
1504 Jones Street
Omaha, Nebraska 68102

Landen Memorial Hospital
4104 Pratt
Omaha, Nebraska

Lisle Corporation
Clarinda, Iowa 51632

Lozier Corp.
4402 Florence Blvd.
Omaha, Nebraska 68110

Lueder Const. Co.
201 So. 46th St.
Omaha, Nebraska 68132

Lutheran Gen. Hospital
415 South 26th St.
Omaha, Nebraska

Mainelli Const. Co.
4502 South 36th St.
Omaha, Nebraska 68106

Manpower Inc. of Omaha
1311 Farnam Street
Omaha, Nebraska 68102

Mastercraft Furniture
1111 North 13th St.
Omaha, Nebraska 68102

Methodist Hospital
6312 Cumming
Omaha, Nebraska

McMartin Indus. Inc.
605 No. 13th St.
Omaha, Nebraska 68102

Mercy Hospital
420 E. Washington
Council Bluffs, Iowa 51501

Meredith WOW Inc.
3501 Farnam Street
Omaha, Nebraska 68131

Midco Hotels Corp.
1220 Sher. Font. Hotel
Omaha, Nebraska 68102

Mutual of Omaha
3316 Farnam Street
Omaha, Nebraska 68101

Nagl Manufacturing Co.
2126 Cummning
Omaha, Nebraska 68102

Natelson's Inc.
219 So. 16th Street
Omaha, Nebraska 68102

National Disposal
2205 So. 24th St.
Omaha, Nebraska 68108

Natl. Indemnity Co.
3024 Harney Street
Omaha, Nebraska 68131

Natkin and Company
1924 Oak Street
Kansas City, Mo. 64108

Nebraska Blue Cross
518 Kilpatrick Bldg.
Omaha, Nebraska 68102

Nebraska Clothing Co.
15th and Farnam
Omaha, Nebraska 68102

Nebraska Consol. Mill
5th Fl. Kiewit Plaza
Omaha, Nebraska 68131

New Non Pareil Company
117 Pearl Street
Council Bluffs, Iowa

New Towor Motel Courts
78th and Dodge
Omaha, Nebraska 68114

Northern Natural Gas
2223 Dodge Street
Omaha, Nebraska

Omaha Athletic Club
1714 Douglas Street
Omaha, Nebraska 68102

Omaha National Bank
1620 Farnam St.
Omaha, Nebraska 68101

Omaha Printing Company
1301 Farnam Street
Omaha, Nebraska 68110

Omaha Public Schools
3902 Davenport
Omaha, Nebraska

Omaha Standard Body Co.
2401 West Broadway
Council Bluffs, Iowa 51501

Omaha Steel Works
4625 Farnam
Omaha, Nebraska 68132

Omaha Towel Supply
4322 North 24th St.
Omaha, Nebraska 68110

Omaha Transit Co.
2615 Cuming St.
Omaha, Nebraska 68131

One-20 Corp. Food City
2500 South 120th St.
Omaha, Nebraska 68131

Orchard and Wilhelm
416 South 16th St.
Omaha, Nebraska 68101

Paramount Paper Prod.
4402 North 23rd St.
Omaha, Nebraska 68110

Paxton Mitchell Co.
2614 Martha St.
Omaha, Nebraska 68105

Paxton-Vieling Stee.
Council Bluffs, Iowa

E. M. Peet Mfg. Co.
33 South 25th St.
Council Bluffs, Iowa

Pendleton Wool Mills
911 Douglas St.
Omaha, Nebraska 68102

Peter Kiewit Sons
1000 Kiewit Plaza
Omaha, Nebraska 68131

Philips Dept. Store
4935 South 24th St.
Omaha, Nebraska 68107

Physician Mutual Ins.
115 So. 42nd St.
Omaha, Nebraska 68131

Puritan Laundry Co.
3737 Lake Street
Omaha, Nebraska 68111

Ready Mixed Concrete
4315 Cuming Street
Omaha, Nebraska 68131

Red Ball Express Co.
6666 Red Ball
Omaha, Nebraska 68117

Rosen Novak Auto Co.
2036 Farnam Street
Omaha, Nebraska 68102

St. Joseph's Hospital
2305 South 10th
Omaha, Nebraska

Samardick Plant
Guards Inc.
410 South 18th St.
Omaha, Nebraska

Schmiddel Hotels Corp.
36th and Farnam Sts.
Omaha, Nebraska 68131

Shaver Food Mart
3929 Harney St.
Omaha, Nebraska 68131

Skinner Macaroni Co.
6848 F Street
Omaha, Nebraska 68114

H. P. Smith Motors
5051 L Street
Omaha, Nebraska 68117

Storz Brewing Co.
1807 No. 16th St.
Omaha, Nebraska 68110

Snow Corporation
4350 McKinely St.
Omaha, Nebraska 68112

Swift and Co.
27th and Q Streets
Omaha, Nebraska 68107

Thomas Kilpatrick and Co.
1501 Douglas St.
Omaha, Nebraska 68010

Tip Top Products Co.
1514 Cuming St.
Omaha, Nebraska 68102

United A G Stores
7312 Jones
Omaha, Nebraska 68101

United Benefit Life
3316 Farnam Street
Omaha, Nebraska 68101

Union Packing Co.
4501 South 36th St.
Omaha, Nebraska 68107

United States Check
1201 So. 16th St.
Omaha, Nebraska 68101

U.S. National Bank
P. O. Box 3408
Omaha, Nebraska 68103

Veterans Admin. Hospital
32th and Woolworth
Omaha, Nebraska

Village Inn Pancake House
4420 Dodge
Omaha, Nebraska 68131

Walkers Inc.
4812 Dodge St.
Omaha, Nebraska 68132

Walnut Grove Products
Atlantic, Iowa 50022

Western Iowa Pork
Harlan, Iowa 51537

Wilson and Co., Inc.
27th and Y Streets
Omaha, Nebraska 68107

H. A. Wolf Co.
2nd Floor Baird Bldg.
Omaha, Nebraska 68102

Woodmen of the World
3303 Farnam Street
Omaha, Nebraska 68131

World Insurance Co.
World Insurance Bldg.
Omaha, Nebraska 68101

World Publishing Co.
World Herald Square
Omaha, Nebraska 68102

Wright and Wilhelm
10th and Jackson St.
Omaha, Nebraska 68102

Yellow Cab Inc.
619 South 20th St.
Omaha, Nebraska 68102

Richard H. Young
Memorial Hospital
402 South 24th Ave.
Omaha, Nebraska